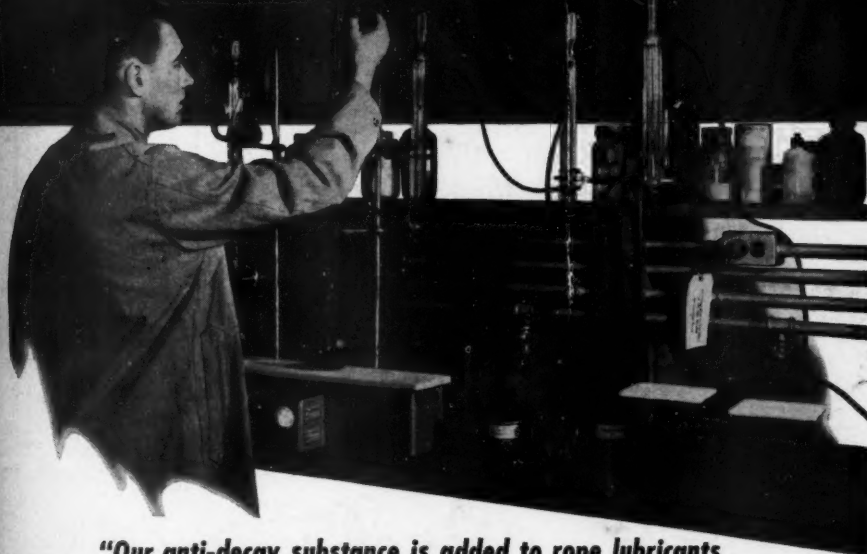


NATIONAL FISHERMAN

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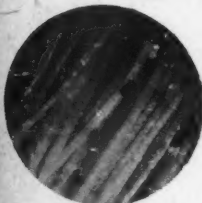
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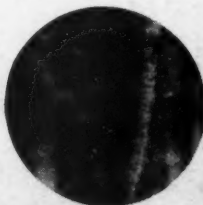
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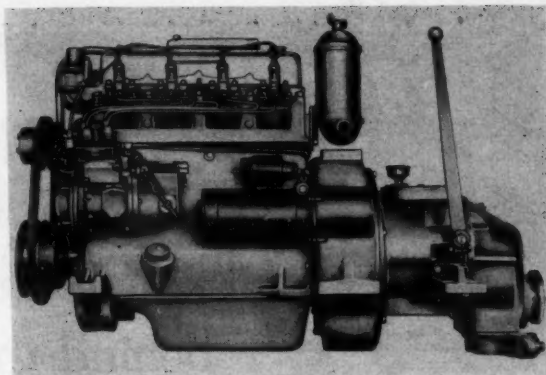
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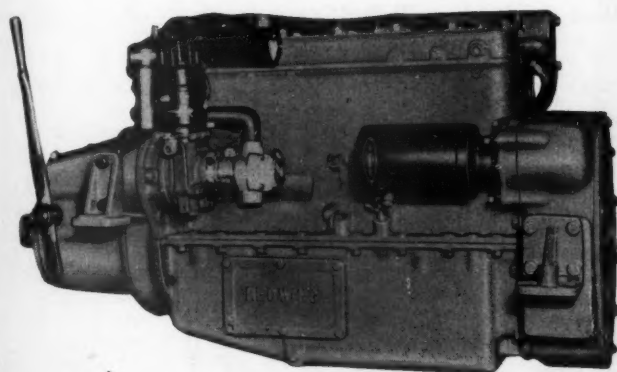
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NATIONAL FISHERMAN

The Fishing Industry Magazine

Formerly Atlantic Fisherman, Established 1919.

Quota Needed on Foreign Fish Imports

Once again spokesmen for the fishing industry have converged on Washington to seek protection against growing imports of fish.

At a hearing before the U. S. Tariff Commission last month, representatives of the New England fisheries urged restriction of groundfish fillet imports by raising tariffs and establishing quotas based on a percentage of average United States consumption.

O. R. Strackbein, chairman of the Committee on Import-Export Policy, urged a quota system to give domestic boat owners, fishermen and processing plant operators an assured share of the market. He emphasized that the industry is not seeking to shut off imports, but wants to create conditions of import competition that will permit the domestic fisheries to enjoy reasonable wages and reasonable returns on their investment.

In speaking for flexible import quotas, Thomas D. Rice of Massachusetts Fisheries Assoc., stressed the need for an orderly marketing formula that would allow an equitable share of present and potential markets for domestic and foreign producers alike.

Speaking before the Fisheries Council of Canada in April of this year, Clarence A. Davis, Under-Secretary of the U. S. Department of Interior, stated: "Imports supplied 54 percent of all (United States) groundfish fillets and blocks last year; 46 percent of the tuna, and tuna-like fish, and 24 percent of the shrimp. Before World War II, these imports supplied 9 percent of the

groundfish fillets, 13 percent of the tuna, and 4 percent of the shrimp.

"United States imports of edible fishery products in 1954, were almost 2½ times those of the annual average of such imports during the pre-war 1934-38 period. Among the major items showing large increases are canned tuna and tuna-like fish, up 4½ times over the prewar period; frozen tuna, up 12 times; and fresh and frozen fillets, up 23½ times.

"The United States is today one of the freest markets in the world so far as tariffs are concerned. About half the trade of nations of the free world is subject to restrictions as to the quantities that may be imported. United States fishery imports are unhampered by such limitations.

"The average ad valorem equivalent of the import duties levied for all fishery products (combining free and dutiable imports), was 6 percent in 1953. This is a reduction of 61 percent from the 15½ percent average ad valorem equivalent in 1936-38. About 33 percent of United States imports of edible fishery products in 1954 were entered free of duty."

The United States fishing industry is entitled to some form of protection from low-cost foreign fish production, much of which is subsidized. A flexible quota system, geared to a percentage of domestic consumption, is a logical approach. It would assure our industry of a fair share of the present market for fish. It would allow both foreign and domestic producers an opportunity to participate in additional fish demand that is created through improved products, better merchandising and increased population.

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FISHERY PROGRESS

► F&WS Reorganization

The House has passed and returned to the Senate the Bonner Bill, H.R. 11570, providing for reorganization of Fish and Wildlife Service (F&WS). If Senate agrees to House amendments, the bill will be cleared for the President.

Bonner Bill provides for an Assistant Secretary of Interior for Fish and Wildlife; a U.S. Commissioner of Fish and Wildlife; a Bureau of Fisheries and a Bureau of Wildlife, each with a director. Bureau of Fisheries would retain all commercial fishery functions, with game fish hatcheries, Federal aid funds under Dingell-Johnson Act and River Basin Studies going to Bureau of Wildlife. With exception of whales, all sea mammals would go to Wildlife.

The Bill includes two recommendations of White House; namely, perpetuation of Saltonstall-Kennedy Act, with approximately \$5,000,000 annually based on present imports rather than present limitation of \$3,000,000 annually, said funds to be used for fisheries research, education, promotion, etc.; and a \$10,000,000 loan fund for repair, maintenance, replacement and re-financing of fishing vessels and equipment. Loans would be made for up to 10 years at not less than 3 percent interest.

Secretary of Interior Fred A. Seaton has announced that, because Congress is considering legislation affecting the Fish & Wildlife Service, administrative reorganization of that agency, scheduled to go into effect July 1, has been temporarily deferred.

► Standards for Boat Scantlings

Costs of building fishing boats, particularly in Europe and some underdeveloped countries, may be cut by as much as 10 percent if plan for establishing universal system of standards for scantlings is finally adopted. The system, now being prepared by Food and Agriculture Organization (FAO) also is expected to lead to developments in design of fishing vessels and an increase in their seaworthiness and operational efficiency.

Speaking at FAO headquarters in Rome, Jan-Olof Traug, Chief, Fishing Boat Section, Fisheries Division, said: "Recently, Dwight Simpson, a well known American Naval Architect, made some far-reaching recommendations for minimum standards of scantlings in wooden trawlers . . . We believe that if the Simpson recommendations were universally adopted the result would be to cut the present high costs of fishing boat construction, especially in Europe and in many of the underdeveloped countries."

► Study How to Increase Fish Use

A three-city study which could be basis for broad campaign to increase consumption of fresh fish and shellfish in inland United States will be made by Boston College during coming months. The survey is part of Saltonstall-Kennedy program.

Three cities selected are Nashville, Tennessee; Indianapolis, Indiana; and Portland, Maine. Portland was selected for comparative purposes to determine whether results of promotional efforts to expand market for fresh fish differ in inland and coastal areas.

► Registration of Haddock Boats

Department of Interior has published in *Federal Register* text of proposed new regulatory provisions which will require registration of vessels used in taking haddock within Subarea 5, a high seas area lying off coast of New England. New regulations are to be adopted in interest of more effective enforcement of 4½" minimum mesh size restriction which has been in effect since 1953 for haddock boats.

► Fisheries Education Bill Defeated

The Fisheries Education Bill, sponsored in House by Congressman John McCormack of Massachusetts, recently was defeated by a slight margin of 6 or 7 votes. The bill, which would have set up machinery for training of fisheries personnel, had passed the Senate unanimously.

► Ten-Nation Commission Meets

International Commission for Northwest Atlantic Fisheries wound up its meeting in Halifax last month with recommendations for more fisheries research. Delegates from 10 member countries were asked to expand research facilities and to carry out more statistical work to fill present gaps.

Observers from Soviet Union attended the first time, and observers from West Germany also were present.

► High Seas Salmon Fishing Banned

Secretary of Interior Fred A. Seaton recently signed an emergency order to put into immediate effect in general area of Bristol Bay, a ban on establishment of new high seas salmon fishery for red salmon of that area. It is claimed that establishment of high seas salmon fishery would have jeopardized Interior Department's salmon conservation policy in Bristol Bay area and further delayed salmon rehabilitation program.

► Shrimp, Sponge and Tuna Research

Three research contracts for projects to study problems in tuna, shrimp, and sponge industries re-

cently have been awarded by Fish and Wildlife Service, as part of Saltonstall-Kennedy program.

Two projects, one an investigation of Florida commercial sponges and the other an investigation of causes and prevention of "black spot" on shrimp, will be conducted by University of Miami Marine Laboratory. The third, an oceanographic investigation of eastern tropical Pacific Ocean for benefit of tuna industry, will be made by Scripps Institution of Oceanography, La Jolla, Calif.

Purpose of the oceanographic study is to make it possible to forecast time and area for good tuna fishing. Since tuna presence and abundance is dependent to great extent upon food supply, and since plankton, which is chief direct or indirect food source for ocean fish, is affected by water conditions, the many phenomena which affect water conditions will come within scope of study.

Sponge research contract provides for general investigation of Florida commercial sponge resource. Specific attention is to be paid to location and extent of grounds, distribution, rate of reproduction and growth, effect of nonselective harvesting, effectiveness of Federal minimum-size law, environmental factors and sponge diseases.

► Effects of Insecticides on Fish

Congressman Lee Metcalf of Montana has introduced a bill directing Secretary of Interior to undertake continuing studies of effects of insecticides, herbicides, and fungicides upon fish and wildlife. He pointed out that 65 million acres were sprayed last year; in addition, about 3½ million acres of forests were sprayed.

In some cases, mass mortalities of fish and game have resulted, according to National Fisheries Institute. There is claimed to be evidence to prove that shrimp nursery grounds are injured by spraying, and there is likelihood that sprays have disastrous effect on oysters, clams, mullet, menhaden, striped bass, crabs, salmon, shad, and many other species.

► Consumer Survey for Canned Fish

Approximately 2,500 housewives in 100 selected counties throughout United States were interviewed during June in course of National consumer survey designed by Fish and Wildlife Service to give cross section of purchase pattern of American housewife with respect to canned fishery products.

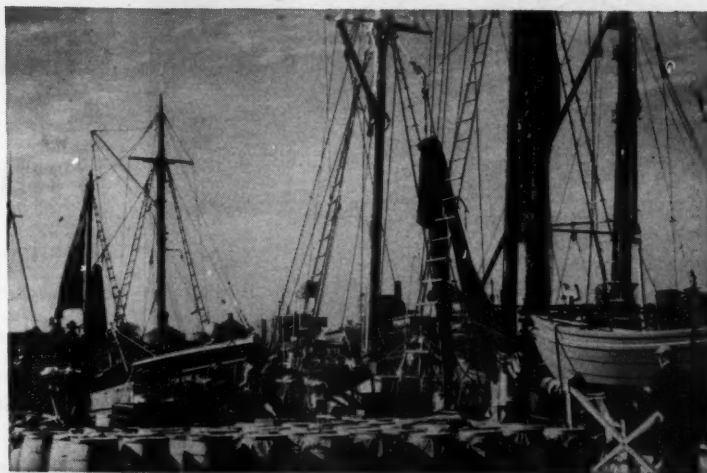
Information was obtained on (1) factors influencing use or nonuse of various species and types of canned fish and shellfish in household, (2) opinions and preference of consumers regarding certain characteristics of canned fishery products and (3) methods of preparing and serving canned fish.

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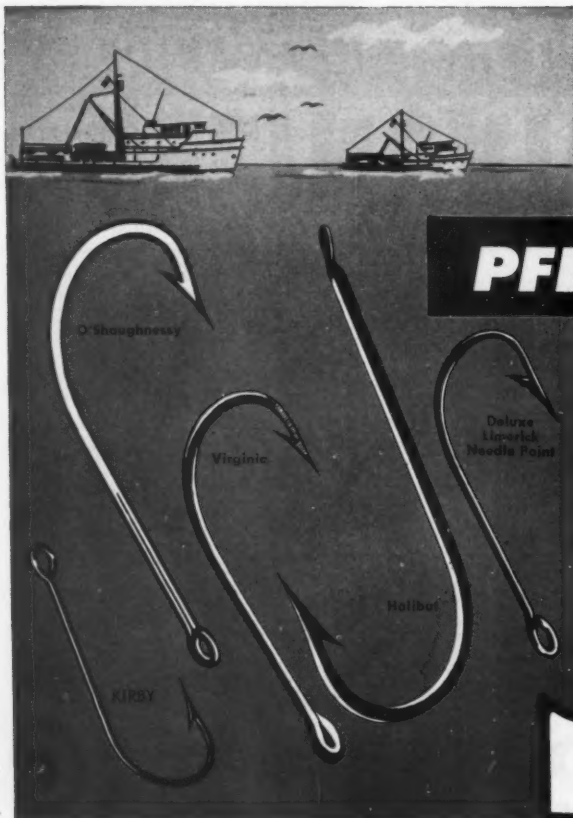
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When Are Fishing Restrictions Necessary?

*Adequate scientific proof of depletion should exist before fishing rate is reduced, according to Dr. C. P. Idyll**

BIOLOGICAL depletion of a fishery can be defined as occurring when a fish stock has been so reduced that it yields less fish, by weight, than it is capable of doing, year after year.

The economic definition of depletion says that it takes place as soon as it becomes unprofitable to fish—when the cost of boats, supplies and fishermen's shares is more than the income from the catch. It is obvious that the point when depletion takes place, under this definition, varies with the price of fish and the cost of catching them, as well as with the abundance of fish. It is possible for a fishery to be depleted, economically speaking, during a period when fish are relatively abundant, if it is impossible to sell the catch. Later when there is a demand for the product and prices are higher, the fisherman can make a satisfactory profit with the same small catches.

An unfished virgin stock of fish will yield a bigger catch than a stock which has been exploited for a period of time, but this larger yield is only temporary. After the fishery has been under way for some years, at a reasonably constant rate of fishing, the yield will stabilize itself at a lower level than during the first year of fishing. What the level of this stabilized yield turns out to be will depend on the intensity of the fishing and the balance between the growth and death rates of the fish.

There is, for each population of fish, a theoretical density, a theoretical level of abundance, which will yield the greatest steady production of fish over a long period of years. Biological depletion occurs when overfishing (or some other factors) reduce the abundance so that this optimum steady yield cannot be realized. Biological depletion occurs frequently—or perhaps usually—at a different level of abundance than economic depletion. Thus, a fishery enjoying a good market may make a profit and not be depleted economically, although catches are very low as a result of severe biological depletion.

Overfishing and Conservation

If we accept this definition of biological depletion, it is easy to define "overfishing" and then to proceed to a consideration of conservation. Overfishing would seem to be the rate of fishing which reduces the abundance of a fish population to the point where it yields less than its optimum. Then "conservation" would be the establishment of the level of fishing that would insure that the optimum yield was realized year after year.

It is important to realize that control of the fishing rate may involve the encouragement of the fishery instead of the imposition of restrictions. This emphasizes the concept of underfishing, which, under the modern idea of conservation, is thought to represent as much a waste as does overfishing.

There is no such thing as underexploiting a mineral resource because the copper or lead will be there to be mined 50 years from now if it is not removed this year. Fishery resources are different, and require a different concept of conservation. If fish are not caught, in a very short time—usually in not more than a few years and frequently in only a few weeks—they die or are killed by predators and are lost as human food. This does not mean that it is proper to catch all the fish in a population to avoid losing them, because some must be left for reproduction, and the nice balance that must be struck between overfishing and underfishing is what makes fishery conservation so difficult.

"Fishery management" may be said to be the manipulation of fishing effort to insure that the population yields the maximum possible amount of fish, by weight, not for one year only but permanently, and to insure that the fish arrive on markets when they can be best absorbed. Good fishery management should involve encouragement of increased fishing effort if underexploitation can be proven and if markets exist for more fish. It also should be prepared to impose restrictions on fishing where overexploitation can be shown to exist. But this should not be its sole function.

Underexploitation

If the yield is below the optimum because of underexploitation, then management involves the discovery of new fishing grounds through exploration and the increase in catches through the development of new ways of detecting and capturing fish. If the yield is less than maximum because of overfishing, then management is again necessary and some methods of reducing the fishing rate must be found.

The fishing industry frequently has suffered severely and unnecessarily because of restrictive regulations, imposed without proof of their need. Reduced catches are not necessarily proof of depletion; lower catches per boat or per man are not necessarily proof; the pained outcry of opponents of all kinds of commercial fishing or of opponents of certain types of gear is not necessarily proof either. The proof comes only through the painstaking methods of science, the careful analysis of production records, and the unraveling of the complexities of the biology of the fish themselves. The tools for these studies have improved greatly in the last three decades, and are increasing at an accelerated rate, so that we can afford to insist more and more on adequate proof of need, before restrictions are placed on fishing activities.

Methods of Controlling Fishing Effort

When through adequate scientific study, depletion has been proven to exist, there are several devices available to manage the fishery, in order to restore it to the optimum level and keep it there. These methods include closed seasons, closed areas, size limits, mesh limits, catch or bag limits, and gear restrictions. They are all variations of the one basic method—to reduce the fishing effort. Some are better than others, and which one or which combination is used will depend on circumstances.

Direct catch regulation, controlling the quantity of fish caught, has been declared the best method by competent biologists, but for successful use it requires a degree of understanding of the biology of the fish and of the dynamics of the stocks that rarely has been achieved. A minimum size limit, usually accompanied by mesh regulations, is also a valuable regulatory method, but again its proper application depends on a high order of scientific achievement.

Closed Seasons and Areas

Closed seasons are particularly useful in regulating salmon fisheries, but are less valuable for some other species. Closed areas are much less useful than has been generally believed. Restrictions on gear, whether of kind or quantity, are open to many criticisms, and have been declared to be among the weakest methods of controlling fishing effort and likely to be least fair to the fisherman as well as least effective in achieving their purpose.

If the principle is borne clearly in mind that fisheries must be managed for the benefit of the fisherman and not for the fish; if restrictions are not placed on fishermen without proven need; if regulations when they are shown to be required are devised with the aid of the best scientific information available, then we can say we have devised effective management, and have pointed to the way it can be achieved.

*University of Miami Marine Laboratory.

Construction Specifications for Mid-Water Trawl

UP to 1800 pounds of dogfish were taken with the British Columbia mid-water herring trawl in tests conducted recently off Washington and Vancouver Island by the exploratory fishing vessel *John N. Cobb* of the Fish & Wildlife Service. But no sizable schools of herring were located by the *Cobb*, and the best catch of this variety was 10 pounds.

How the British Columbia mid-water herring trawl is fished was described in our June issue; the following article gives directions for making the net:

The British Columbia mid-water herring trawl is a tapering, box-shaped net divided into three main parts, each of which is described in order of its construction. They are the body, the cod end with "zipper", and the wings.

The body of the net is built in three tapering sections, and #93 thread nylon is used. The first section represents the widest part of the body and is built from four equal pieces of 5" mesh netting. Each piece measures 300 meshes along the front edge (selvage edge) which gives a total of 1,200 meshes in circumference. The sides are cut 50 meshes long with a 4 bar 1 mesh taper, so that the back edge of each tapered piece is 234 meshes wide. All four sides are laced together, commencing at the front or widest edge, by gathering in three meshes (four knots) on each side with the lacing to form a seam.

Each of the four sides of the second section, which utilizes 4½" mesh netting, are cut 275 meshes wide (making 1,100 in circumference), 75 meshes deep with the same 4 bar 1 mesh taper as in the first section. This leaves the back edge of each of the four sides with 175 meshes. After the four sides are laced together in the same manner as the first section, the second section of 4½" netting is joined to the first section of 5" netting. The two sec-

Net fishes entirely off bottom and has proved successful in British Columbia herring fishery*

tions are joined mesh for mesh, but with every fifth mesh of the 5" web it is necessary to pick up one mesh of the 4½" netting (called 5 and 1 intake).

Each of the four sides of the third section, which utilizes 3½" mesh netting, are cut 212 meshes along the front edge (848 in circumference), and 100 meshes along the side with the same 4 bar 1 mesh taper, leaving 78 meshes along the back edge. Once the four sides are laced together, as in the first two sections, the third section is joined to the second, mesh for mesh. However, with every fifth mesh of the 4½" web, two meshes of the 3½" netting are taken in.

Doubled nylon twine (#93 thread) is used in sewing each section together in order to prevent the knots from sliding. In sewing the sections together any odd meshes are gathered in along the seams.

Cod End Has Six Sections

The cod end, which is of box-type construction, is made of six sections or strips of 1¼" web, #63 thread nylon, each strip 100 meshes long. The first four sections are cut with a 4 mesh 1 bar taper, but the remaining two sections are built without a taper.

In the first section of the cod end, each of the four sides is cut 200 meshes wide on the front edge (making 800 meshes in circumference) and 100 meshes long with a 4 mesh 1 bar taper, which leaves 178 meshes on the back edge of each side. After lacing the four sides of the first section together by gathering in three meshes from each side to form a seam, the remaining three tapered sections are built independently in the same way.

In the construction of the remaining sections of the cod end, it is not necessary to count the number of meshes along the front edges of the sections, because the same taper is used in the first four tapered sections and each section is joined mesh for mesh. The remaining netting in the bale of web is first laced mesh for mesh with the back edge (178 meshes), of the first section, and cut with a 4 mesh 1 bar taper to form each side. After the front edges of the second section are laced to the back edges of the first section, and the sides laced together, the third and fourth sections are cut and laced together in the same manner.

The last two sections are cut from one piece of netting without a taper. The netting is merely folded to form a box-like section and then sewn mesh for mesh to the fourth tapered section.

The "zipper" begins at the forward edge of the cod end meshes on the upper starboard corner and extends backward along the rib-line for 2½ strips of web or a distance of about 36 feet. The zipper is hung on two lines of 5/16" braided nylon rope (one of which forms part of the rib-line). Galvanized metal rings 1¼" in diameter are lashed with #27 medium cotton twine on each rib-line 18" apart and abreast of each other. A 5/16" braided nylon rope laced through the rings is used to close the zipper. The length of the zipper normally should extend from the rigging amidships backward to the stanchions. The actual length, of course, will depend on the length of the trawler and the judgment of the skipper.

Triangular Pieces of Netting Used in Wings

The four wings are made from eight triangular pieces of #93 thread, 5" nylon netting. Each triangular piece is cut 75 meshes wide, 75 meshes long and tapered with a bias cut. Each wing is made by lacing together two of these triangular pieces down the sides, which are 75 meshes long. This forms a wing with a base 150 meshes long and sides tapering up on the bias to the apex which is 75 meshes above the base.

* Based on a progress report of the Fisheries Research Board of Canada, Pacific Biological Station, Nanaimo, B. C.

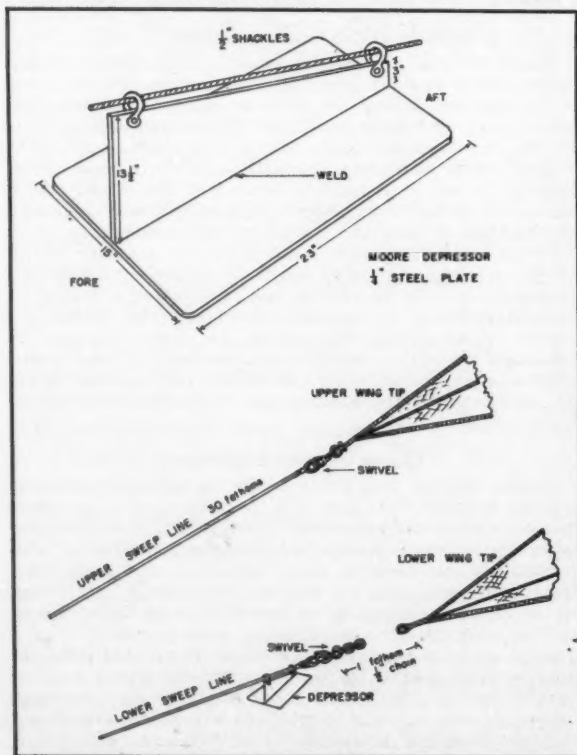


Fig. 2—Steel depressor used with British Columbia mid-water trawl, including diagram showing how depressor is attached to the sweep line.

Each wing is placed mesh for mesh to the body section, commencing at the junction of the center of the base of the triangular-shaped wings and the corner seams of the body section, and laced toward the square. The square is the section of the net between two wings. In this net it is 16 feet long on each of the four sides.

Hanging of Wings and Body to Rib-Lines

The rib-lines of 5/16" braided nylon rope are first stretched 2½ feet for every 60 feet. The seams of the net are then "tacked" every 2½ feet along the stretched rib-lines commencing at the apex of the wings and continuing back along the 5", 4½" and 3½" meshes of the body. Lacing of the wings and body to the rib-lines is then completed.

When the strain on the rib-lines is released, the netting on the wings and body section hangs in small bights. It is necessary to hang the wings and body to the rib-lines in this manner in order to prevent them from ripping apart when the net is under tension in the water. When the net is fishing the rib-lines again take the strain and the netting hangs evenly along the entire length of the wings and body. (Non-stretch braided nylon rope is now available, and use of this material would eliminate the need for adjustments in hanging as described here.)

Hanging of Wings and Body to Head-Ropes

A combination manila and six-strand wire rope of 9/16" diameter is used for the head-ropes or head-lines. This rope has a breaking strength of about 2,700 lbs. The wings and body are hung directly to the head-ropes with braided nylon twine (No. 15 extra soft). When hanging the wings to the head-rope, three meshes from the wings are gathered in to form a selvage edge. This shortens the wings to 72 meshes in length so that the taper on the wings (distance from the apex of the wing to the square) measures 29¾ feet. The 150 meshes of the body, which form a square 16 feet long, are hung or spaced 1¼" apart on the headrope.

Great care must be taken in hanging the corners of the wings at the point where the square terminates and the

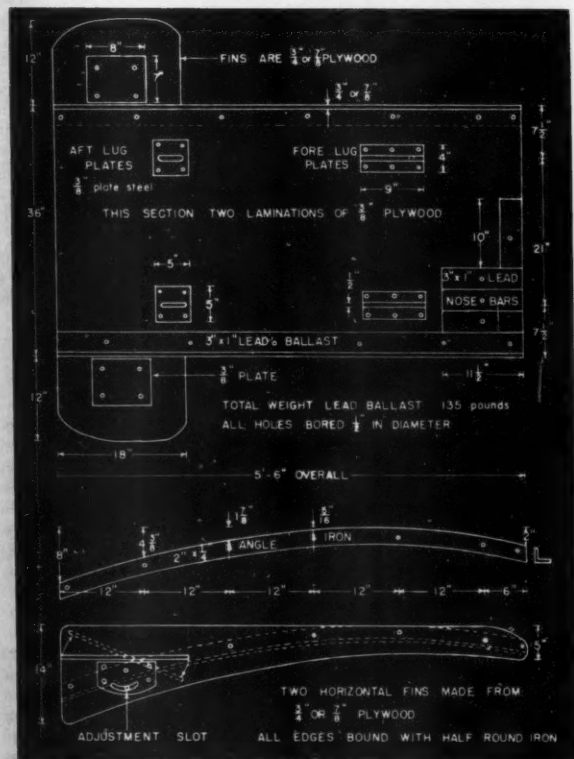


Fig. 3—Dual-fin otter-board used with British Columbia mid-water trawl.

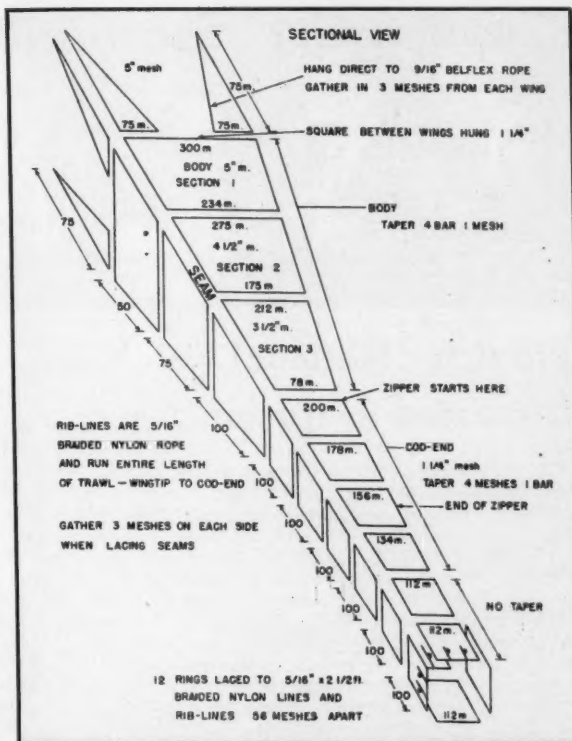


Fig. 1—Sectional view of British Columbia mid-water herring trawl.

wing section begins, so that the corners will not tear out when the net is towed. A six-foot length of 5/16" braided nylon rope, laced exactly from the corner down the meshes toward the cod-end, usually overcomes this.

The head-rope is continued for a length of three feet beyond the wing tips and ends in an eye-splice. This extra length is necessary so that the shackles will not tear the netting, and will remain clear when stacking the net on the stern of the vessel or when setting the gear.

In hanging the lead-line to the wings and body, the ½" braided nylon lead-line is lashed to the combination manila and wire rope lead-line every 18 inches commencing about a point 1½ fathoms from the tip of one wing and extending along the square to the same position on the other wing. It is approximately 50 feet long and weighs about 25 pounds.

In hanging the cod end to the rib-lines, the 5/16" braided nylon rib-lines are not stretched in the cod end. The four seams of the 1¼" netting are hung evenly to the unstretched rib-lines. A piece of 5/16" braided nylon line is hung around the selvage at the end of the cod end. This keeps the end of the net in trim and evens the web when tying the cod end.

At the end of the cod end, eight lengths of 5/16" braided nylon line, each 2½ to 3 feet long, are laced parallel to each other and 56 meshes apart around the cod-end (Fig. 1). About 18 inches up from the end of the net, 12 galvanized metal rings 1¼" in diameter, are lashed separately to the eight short nylon lines and to the four rib-lines with No. 27 medium cotton twine.

The poke string or cod end rope and the cod end haul-back line are all one length of 7/16" braided nylon rope. In closing the cod-end, the poke string, which passes through the metal rings, is given an extra turn with the short end completely around the cod end and then tied snugly with several chain knots. The remainder of this line (haul-back line) is brought forward along the upper starboard rib-line, where the zipper is located, and made fast to the foremost zipper rings.

The completed sectional view of the wings, body and cod-end is shown in Figure 1.

(Continued on page 41)



NATIONAL FISH WEEK promotion program for 1956, which is scheduled for October 29 to November 3, being discussed. Left to right: Murray Wheeler, public relations director of National Fisheries Institute; Harry A. Trimm, Jr., Birds Eye Division, General Foods, New York, chairman of National Fish Week Committee; Kay Larson, WHEN-TV, Syracuse; Paul Jacobs, Gorton-Pew Fisheries, Ltd., Gloucester; and J. Roy Duggan, SeaPak Corp., St. Simons Island, Ga. Chief purpose of promotion campaign, which will be called Fish Parade, is to bring to attention of buying public tremendous variety of fishery products available.

Plans for National Fish Week Discussed in Washington

A Task Force of 75 to 100 men in the fishing industry will be named to form local "Fish Parade" committees for next Fall's all-industry promotion, it was announced at the National Fish Week Committee's June 4 meeting in Washington, D. C. Harry A. Trimm, Jr., chairman of the Fish Week Committee, is manager of the fisheries section, Birds Eye Division of General Foods, White Plains, N. Y. Harold Luther, Norwegian Frozen Fish Co., Jersey City, N. J., is chairman of the Task Force. Fish Parade dates are October 29 to November 3.

Murray Wheeler, director of the Committee's advertising and publicity, submitted proofs of advertisements to appear in trade magazines, the emblem to be used in tie-in advertising and window strips for restaurant and retail stores. He also told of plans to publicize all fishery products through newspapers, magazines, radio and television, and brought the Committee up to date on the work being done directly with allied food industries, independent and chain retail stores.

Promotional kits are being made ready for the Task Force, Mr. Wheeler said. Called "How to Increase Your Fish Sales During National Fish Week," a kit will include suggested proclamations by mayors and governors, plans for forming local committees, television and radio commercials, suggestions for store displays, and other material which can be used locally.

The part the Fish and Wildlife Service will play in the Fish Parade was announced by Arnie Suomela, associate director of the Service. The agency plans to request the cooperation of major food trade associations, release announcements of the Fish Parade from the Secretary of the Interior's office, contact restaurant associations, public utility units and similar groups.

Associations now participating in the Fish Week promotion are: American Tunaboat Association, Fisheries Council of Canada, Fishery Council of New York, Gloucester Fisheries Association, Maine Sardine Industry, Massachusetts Fisheries Association, National Fisheries Institute, New Bedford Seafood Council, Northern California Seafood Institute, Northwest Fisheries Association of Seattle, Shrimp Association of the Americas, Southern California Fisheries Association, South African Rock Lobster Association, State of Maine Sea and Shore Fisheries, Tuna Research Foundation, Wholesale Seafood Dealers of Philadelphia, and Wisconsin Fish Dealers Association.

Ask Funds for Complete Eradication of Lamprey

Congressman Henry S. Reuss of Wisconsin has urged that the House Appropriations Subcommittee increase the appropriation for lamprey eradication from \$615,000 to about \$815,000, so that electric barriers can be installed on all the streams of Lakes Huron, Michigan and Superior where the lamprey flourishes.

The \$615,000 now being requested by the Department of State is adequate to operate all the existing barriers, to construct and operate additional barriers on all infested streams in Lake Superior, and to construct and operate additional barriers on streams in the northern part of Lake Michigan. However, no money is scheduled to be used to protect southern Lake Michigan or any part of Lake Huron.

This is a "penny wise, pound foolish" policy, according to Congressman Reuss, as lampreys can swim from one part of Lake Michigan to another, and from Lake Huron into Lake Michigan. According to figures submitted by the Department of the Interior at hearings last year before the House Merchant Marine and Fisheries Committee, the cost of constructing a lamprey barrier ranges between \$3,000 and \$4,000.

With the money now being requested by the State Department building of 61 new barriers on Lakes Superior and Michigan is contemplated, thus leaving uncovered 31 streams entering Lake Michigan and 33 entering Lake Huron. To protect these streams would require about \$200,000 to \$250,000 more than the State Department is requesting, plus the necessary maintenance funds.

The International Great Lakes Fisheries Commission, which held its organizational meeting in Ottawa the latter part of April, gave attention to the lamprey problem. A temporary scientific committee appointed by the Commission reported that the most effective device yet developed for controlling the sea lamprey is an electrical barrier, placed across streams tributary to the Great Lakes, up which the lampreys go to spawn.

Until a permanent executive secretary is appointed, the work of the Great Lakes Fisheries Commission will be directed by Dr. James Moffatt, chief of Great Lakes Fishery Investigations for the Fish and Wildlife Service. The Commission has appointed a permanent scientific committee, made up of biologists from Canada and the United States, to continue joint efforts to control the lamprey.

The Great Lakes Fisheries Convention area embraces Lake Ontario (including the St. Lawrence River from Lake Ontario to the forty-fifth parallel of latitude), Lake Erie, Lake Huron (including Lake St. Clair), Lake Michigan, Lake Superior and their connecting waters. The Convention also applies to the tributaries of each of the above waters to the extent necessary to investigate any stock of fish of common concern, the taking or habitat of which is confined predominantly to the Convention area, and to eradicate or minimize the lamprey populations.

United States members of the Great Lakes Fisheries Commission are Claude Ver Duin, Grand Haven, Mich.; Lester P. Voigt, Madison, Wisc.; and John L. Farley, Arlington, Va.

Canadian Commissioners are: Dr. A. L. Pritchard, Director, Conservation and Development Service; Dr. W. J. K. Harkness, Chief of the Ontario Division of Fish and Wildlife; and Dr. A. O. Blackhurst, Manager, Ontario Council of Commercial Fisheries.

Pipelines May Be Fishing Gear of the Future

Newly-patented idea provides for fish being sucked into pipes laid on ocean floor and pumped out at plant—By Inventor Hugo Gernsback

CURIOSLY ENOUGH, when it comes to fishing, man still uses the most archaic means—virtually the same methods which were used by savages and prehistoric man 100,000 years ago.

We still fish by boat. Yes, the ships are a bit bigger now than the hallowed-out trees used originally during the dawn of man. But, weather still stops our fishing boats as it did in antiquity. We still use nets to catch a comparatively few tons of fish even when using a big modern ship. All this is slow, inefficient, and very expensive. Worse yet, we go after the fish, when it's far easier and cheaper to have fish come to us!

There is an inexhaustible supply of fish in the oceans that could be supplied at a reasonable cost to every human in the world—either fresh, canned, frozen, extracted, or processed. The way to harvest this never-ending crop is comparatively simple—catch the fish by pipelines.

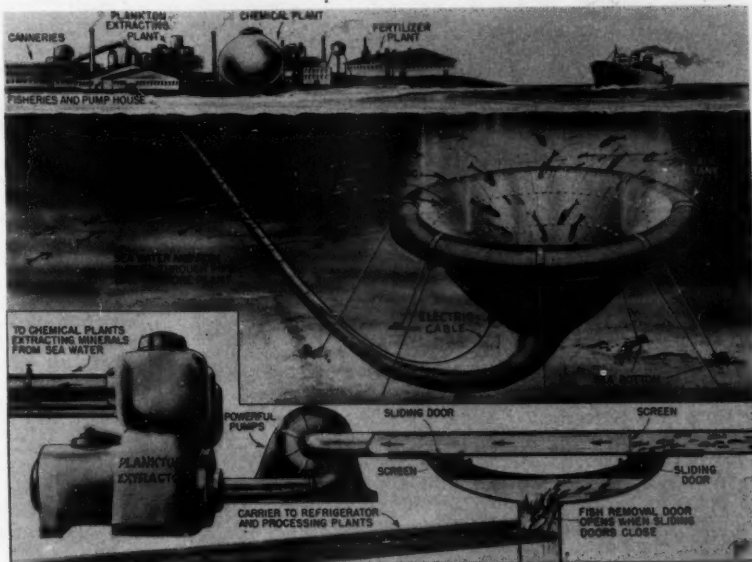
Great technological progress has been made in recent years in cheap transportation of oil and gas over huge distances by means of large-diameter pipelines. The pipes measure from one to two feet and over in diameter. Lengths up to 55 feet are welded together, making a single unending pipe, frequently running thousands of miles. They are sunk into ditches, run over bridges, or through rivers and lakes. Recently several huge-diameter pipelines even crossed the deep Hudson River to bring natural gas to New York City from the Southwest.

The plan to lay such pipelines on the shallow ocean floor, running them from 10 to 25 miles out into the ocean, is today quite feasible. Many countries are favored by comparatively shallow waters near their coasts. Thus, the U. S. has a wide, almost continuous, continental shelf along the Eastern seaboard. While this shelf is often over 100 miles wide, it is rarely more than 25 fathoms (150 feet) deep. Within 25 miles of the coast, in many sections, the water is only 75 feet deep—ideal for pipe-laying purposes.

To lay these ocean pipes, a special ship would be required, that would not rock or pitch. Such ships can be built today. They work on the principle of the "ocean islands" once proposed to land aircraft in mid-ocean. All the engineering of such stable, floating islands has been successfully solved. Actual models were built a number of years ago.

With such a stable ship, the danger of broken pipes, due to the ocean's swell, would be practically eliminated. Even if an occasional break did occur, the end of the pipe always could be fished up again by using floats and special machinery. Naturally, too, ocean pipe-laying would be undertaken only in good weather, during a calm sea.

At the land end of the pipe, sea water would be admitted, so that the entire pipeline would be continuously filled with water. This would prevent floating of the pipe, which would occur if it were empty. Thus, breaks in the pipeline would not take place on the previously carefully surveyed, shallow ocean shelf.



Diagrammatic view showing how pipeline would be used to catch fish.

Huge Funnel at End of Pipeline

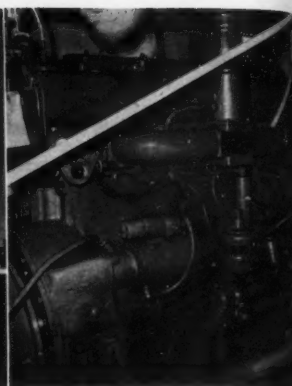
Fifteen, twenty, or twenty-five miles out, wherever there is known to be a steady supply of fish, the pipeline would terminate. But the terminus would not be just an open two—or three-foot pipe. Here a special installation would be made in the form of a huge stainless steel funnel, from 50 to 75 feet in diameter at its large end. This funnel would be from 50 to 60 feet or more below the surface of the ocean, depending on the locality, observed fish density, and other technical requirements.

The open funnel would be kept afloat and in position by a number of steel tanks welded near the upper rim of the funnel. Thus they never would rise to the surface and therefore could not be rammed by passing ships. The open end of the funnel always would be in an upright position. It would be kept from swaying laterally by special anchors.

Around the rim of the funnel there would be a number of specially-colored electric lights. These would serve to attract the fish. Experience soon would teach what types of fish were attracted to a given color and a given light intensity. The lights would be operated from shore, through a special electric cable running parallel to the pipeline.

At the shore fishery establishment, powerful pumps attached to the pipeline would suck in the water (along with the fish) in a continuous stream. The suction at the end of the funnel could not be too strong nor too rapid or the fish would get away. But as the suction would be divided over the entire diameter of the largest part of the funnel, it can be seen that the suction would be much greater at its narrow part. Consequently, once down in the funnel the fish would find it difficult to swim back into the ocean. A goodly percentage of the fish swimming at and across the level of the funnel would be sucked into the pipeline and on to the processing plant.

(Continued on page 30)



Left to right: Ted Fontaine, Mrs. Ted Fontaine, and George Fontaine, owners of the new 55' Hatteras Trawler "Miss Edisto", built by Morehead City (N.C.) Shipbuilding Corp. The trawler's BAB-128 Murphy Diesel is shown at right.

Five Fishing Boats from North Carolina Builder

55-Ft. Hatteras Trawlers designed for Southern shrimping and for dragging off New England

FIVE new Hatteras Trawlers, all 55 feet in length, recently joined the fishing fleet operating in the area from Connecticut to Texas. The boats were constructed by Morehead City (N.C.) Shipbuilding Corp., and will be engaged in the Southern shrimping industry and in New England fishing operations.

Two of the boats, the *North Wind*, owned by T. C. Mills of Freeport, Texas, and the *Edna G.*, built for Guido Grasso of New Haven, Conn., made their trial run into the Atlantic Ocean side by side. Fishermen observed the performance of the two craft, and discussed the differences in their rigging and equipment. Actually, the *Edna G.* was not ready for delivery at the time of the dual trial run; her paint job was not complete, and there was more work to be done on deck.

The two vessels are quite different in appearance. On the Southern boat the deckhouse is forward, while on the Northern boat the "turtleback", pilothouse and captain's quarters are aft. The rigging also is different, the *Edna G.* being a New England dragger.

The hailing port of the *North Wind* will be Houston, Texas. The craft is powered with a 6-71 General Motors Diesel with 3.75:1 reduction gear and 40 x 32, 4-blade propeller. She has 750-watt Onan light plant, four Surrrette batteries of 8 volts each, and 300-gallon fresh-water tank is in the forepeak.

On the deck of the *North Wind* is a Model 515½T Stroudsburg hoist, with 900' of 7/16" Wickwire wire rope on each of the two drums. A 1¼" Jabsco pump is connected with the winch drive, and another 1¼" Jabsco pump with clutch is connected with the power take-off.

Equipment on "Edna G."

The *Edna G.*, which is a New England dragger, is powered with a 6-110 General Motors Diesel with 3.75:1 reduction gear, and has 42 x 38, 3-blade propeller. The Onan Diesel light plant is a 3,000-watt model, which has a 1½" Jabsco pump operating from the tail shaft. There is a 1¼" Jabsco pump with clutch operating from the power take-off, and the vessel is equipped with four Surrrette batteries. On the deck of the *Edna G.* is a Model 7233X Hathaway hoist, and each of the two drums carries 250 fathoms of 9/16" Wickwire wire rope.

The *Edna G.* has two 800-gallon fuel tanks, and one 150-gallon fresh-water tank in the forepeak. The booby hatch,



Two 55' Hatteras Trawlers make their first run into the Atlantic Ocean, side by side. The "North Wind", owned by T. C. Mills (right) of Freeport, Texas, is equipped for Southern shrimping, while the "Edna G.", built for Guido Grasso of New Haven, Conn., is especially designed for New England fishing.

which affords entrance to the forepeak, is built in one piece, with a 60-gallon fuel oil tank which supplies the Shipmate Model 212 oil-burning galley range in the forepeak. Four bunks, a folding mess table with seats, and lockers for the crew, also are in the forepeak.

There is no Samson post on the *Edna G.* Instead a steel breast hook, with an 8" steel pipe, has been welded and reinforced as a forward mooring bitt. The forepeak is ventilated through a 6" steel pipe which rises 5½' above the main deck.

In the pilothouse of the *Edna G.* is a Raytheon "Fathometer" DE-112 depth recorder. There is a 76-B Apelco radiotelephone in the captain's quarters, which also contain a single built-in bunk with drawers underneath. The boat's toilet is in the turtleback aft of the pilothouse.

The fish hold on the *Edna G.* is divided into 11 bins. On deck are ten 12" galvanized deck plates, through which fish are fed into the bins.

"Miss Edisto" to Shrimp on Florida Grounds

The Edisto Marine Service, Edisto Beach, S. C., plans to expand its area of operations with its new trawler *Miss Edisto*, built by Morehead City (N.C.) Shipbuilding Corp. The seafood firm, which processes and packages its own catches, as well as shrimp bought from other fishermen, is operated by the Fontaine brothers, Ted and George, with the assistance of Mrs. Ted Fontaine.

The Fontaines own and operate two smaller boats in local waters. With their new Hatteras Trawler, they plan to add Florida shrimping grounds to their area of operations.

Propulsion Equipment

The *Miss Edisto* has a BAB-128 Murphy Diesel, with a 4:1 reduction gear and 42 x 40 three-blade Columbian propeller. She is equipped with a Raytheon radiotelephone, DE-112 Raytheon "Fathometer" depth sounder, and four Surrlette batteries.

There is a 1½ inch Marlow gasoline-driven pump and a Jabsco pump operated from the winch drive. On deck is a Model 515½T Stroudsburg hoist with two spools of 7/16" x 600' Wickwire wire rope and one spool of ¾" x 450' Wickwire wire rope for the try-net.

The *Miss Edisto* has two 600-gallon fuel tanks and a 150-gallon fresh-water tank.

Gets Third Hatteras Trawler

Fred F. Sanders of Savannah, Ga. has taken delivery of his third new Hatteras Trawler within a year. The latest addition to his fleet is the *Miss Dorothy*, which will join the *Miss Louise* and the *Miss Marie*, named for his daughters. "I will have to name the next one after a grandchild," declared the owner, who operates Fred F. Sanders Seafood, Inc. at Turner's Creek in Savannah.

The *Miss Dorothy* is powered with a 6-71 General Motors Diesel with 3.75:1 reduction gear, and has 40 x 32,



The "Miss Dorothy", a 55' Hatteras Trawler recently delivered to Fred F. Sanders (inset) of Savannah, Ga., president of Fred F. Sanders Seafood, Inc. The "Miss Dorothy" was the third Hatteras Trawler Sanders purchased within a year. She was named for one of Mr. Sanders' daughters, as were the "Miss Louise" and the "Miss Marie".

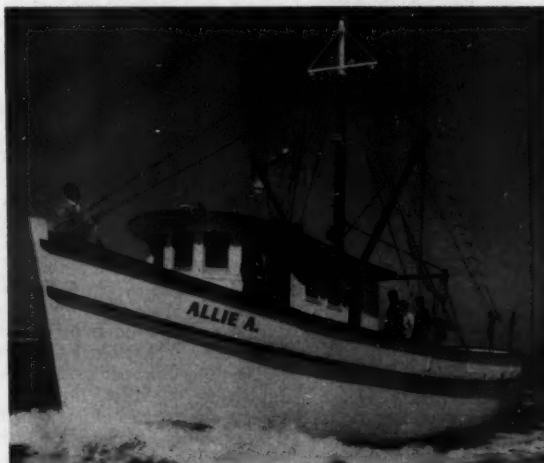
4-blade Columbian propeller. The boat has a 750-watt Onan light plant, and four Surrlette batteries, of 8 volts each. There are two 75-gallon fresh-water tanks, located on either side of the deckhouse; and two fuel tanks, each with a capacity of 800 gallons.

On deck is a Model 515½T Stroudsburg hoist. There are two pumps aboard the *Miss Dorothy*; a 1½" gasoline-driven Marlow pump; and a 1¼" Deming pump, driven off the winch shaft.

"Allie A." to Operate out of Beaufort

Gerald R. Austin of Beaufort, owner of the new Hatteras Trawler *Allie A.*, is a neighbor of the Morehead City (N.C.) Shipbuilding Corp. Mr. Austin is president of the Carteret Fish Co. at Beaufort.

The *Allie A.* is powered with a 6-71 General Motors Diesel with 4½:1 reduction gear, and has 42 x 36, 4-blade Michigan propeller. The two drums on the vessel's Stroudsburg hoist carry 750' each of 7/16" Wickwire wire rope. On the try-net, there is 450' of ¾" Wickwire wire rope. The boat is equipped with a Jabsco bilge pump with clutch driven by the power take-off, and a 1½" Marlow gasoline-driven pump which is connected with the washdown hose.



Gerald R. Austin of Beaufort, N. C., and his new 55' Hatteras Trawler "Allie A." Mr. Austin is president of the Carteret Fish Co. at Beaufort. His new vessel was built by Morehead City (N.C.) Shipbuilding Corp., and is powered with a 6-71 General Motors Diesel with 4½:1 reduction gear and 42 x 36 Michigan propeller.





Trap net boat "Ole H." at Bell's Fishery, Cheboygan, Mich.

Great Lakes Weirs Capturing Many Lampreys This Season

This year's sea lamprey take already has exceeded the total for the entire 1955 season. During the week ending June 10, the catch was 11,780 lampreys from weirs on Lake Michigan and Superior streams, bringing the season's total to 64,330, compared with 56,585 for all of last year. In 1954, the first year the weirs were operated on an extensive basis, the total take was 31,227 lampreys.

The Marquette office of the Fish & Wildlife Service says it has come up with a "promising tool" in its search for a method to kill predatory lampreys without harming useful game fish species. It is a pulsating direct current diversion device, which acts to intercept game fish before they reach the alternating current screens placed on lamprey spawning streams. The DC device diverts game fish into a trap from which they are removed, transported and released upstream above the electrical field.

Plant Trout in Lake Superior

More than 30,000 lake trout recently were planted in Marquette Bay, Lake Superior, by the Fish & Wildlife Service. Of that number, 29,697 were yearlings and the remaining 800 were two-year-old trout that have been tagged, in order to learn about distribution and movements of lake trout.

Lamprey Weirs Being Used for Carp

Electro-mechanical weirs, which first were used in Lake Michigan streams in the fight against the sea lamprey, now are being put into use in the most comprehensive attempt ever made by the State to eradicate and control carp and restore a vast habitat for trout.

An electrical fence has been installed on the Thornapple River in Michigan, near Caledonia, so that carp moving upstream to spawn will be steered into a trap operated in conjunction with the electrical device.

Making Good Whitefish Catches

Commercial fishermen operating on Lake Superior have been getting good yields of whitefish, but many small-size fish have been noted. These, together with the abundance of larger fish, have left markets with carry-overs.

On the big lake, commercial trout trollers have been making impressive hauls of larger fish, while the gill-net fishermen have been getting catches ranging from poor to fair. With the trolling season under way, Duluth, Minn., Bayfield, Wis., Ashland, Wis., Ontonagon, Hancock, Chas-sell, Marquette, Munising, Grand Marais, and Brimley, Mich., commercial fish boat operators are renting out craft

for game fishing and attending to trap and gill nets during early morning.

In the Green Bay area, catches of rough fish species have been good, while yields of yellow perch, yellow pike, chub, and herring have been ranging from fair to good. On Lake Michigan, both Illinois and Wisconsin commercial producers have been getting good catches of chub and fairly good catches of perch. In some areas of the northern end of the lake, a few nice catches of herring have been made.

Commercial fishing on Lake Huron has been heavy, but the catches have not been too impressive except for the rough fish varieties. Bayport, Mich. fishermen have been getting fair commercial quantities of perch, sheepshead, herring, and some smelt, while pike takes have been only mediocre. On the Canadian side, however, some fair takes of whitefish have been made in the Patricia area.

On Lake Erie, commercial fishermen from Monroe, Mich., Clinton, Toledo, Ashtabula, Lorain and Cleveland, Ohio, have been getting good catches of chubs, sheeps-head, smelt, white bass, and yellow perch, while yellow pike hauls have been light.

Erie, Pa. producers have been doing fairly well on the usual species, as have the New York fishermen, except for relatively low yields of whitefish. Catches of blue pike have decreased sharply, and the yellow pickerel yields have been only fair. The Canadian fishermen are of the opinion that Lake Erie smelt are increasing tremendously, but the largest catches on the lake generally consist of carp.

Effects of Seaway on Fishing

Both fisheries biologists and commercial fishermen in the Wisconsin-Upper Michigan area are currently speculating about the possibility that completion of the Great Lakes-St. Lawrence waterway will result in more species of fish from the Atlantic entering the lakes.

It is pointed out that some of the salt water fish already are partly conditioned to fresh water because of their runs up rivers to spawn, and might be able to adapt themselves to life in the Great Lakes. Already two species are known to be present in the lakes, apparently having come in via the Welland Canal. One of these is the sea lamprey, which is depleting the lake trout population of the lakes.

The other is the alewife, which was first noted in Lake Erie in 1931, and gradually moved westward, arriving in Lake Michigan in 1952. Fisheries biologists admit that they do not know too much about the alewife, but along with commercial fishermen, they wish it had stayed at home. The alewife competes with the other fish for food, and it is a markedly inferior food fish. The reproductive capacity of the alewife is tremendous, and according to Dr. Edwin L. Cooper, it is reasonable to believe that each female can produce 100,000 eggs.

Smelt Catch Hits New High

The smelt catch hit a new high this year for commercial fishermen in the Green Bay area, and next season may see more operators going after this species, according to Everett LaFond, veteran Two Rivers fisherman.

Electric Field Around Lamprey's Head

The parasitic sea lamprey, which has been killing large numbers of lake trout and whitefish in the Great Lakes, has been found to possess an amazing characteristic. The lamprey sets up an electrical field around its head and this, when amplified, will light a flash bulb and trigger the shutter of a camera, to take the creature's photograph.

The new discovery about the lamprey was made by Dr. H. Kleerekoper, Professor of Zoology at McMaster University in Hamilton, Ont., who is currently supervising a lamprey research project being carried out for the Fisheries Research Board of Canada.

Dr. Kleerekoper's observations are not only of great biological interest, but are intriguing in that the lamprey's electrical field is limited to regions around its head. The possible value to the lamprey of its electric potentials is still a matter of speculation.

Oregon Adopts New Net Mesh Sizes

Two changes in regulations governing commercial fishing for various ocean fishes in Oregon coastal waters were adopted by the Fish Commission of Oregon recently in Portland. The changes became effective June 20.

In accordance with one change, only otter trawl nets of a mesh size of three inches or less or $4\frac{1}{2}$ inches or greater, stretch measure between knots, will be lawful. The new mesh sizes are designed to provide maximum protection for small-sized Dover, English and petrale sole and still allow a legal harvest of Pacific ocean perch. Perch gill badly and are difficult to remove from larger-sized mesh.

An additional revision of ocean fishing regulations provides that the incidental catch of Dover, English and petrale sole, prohibited for use for reduction or as animal food, shall not exceed 2000 pounds or 20 percent by weight, whichever is the greater, of a single landing, sale, or purchase. The regulation formerly limited the incidental catch of the three species to 2000 pounds or 20 percent of a single trip or fare. The revision was adopted primarily to facilitate enforcement of the incidental catch regulation.

Shad Eggs Being Salvaged and Hatched

Shad eggs too ripe for marketing as roe are being salvaged and hatched and returned to their native waters by fishery workers of the Oregon Fish Commission at the Willamette slough and the Umpqua River. Some two to three million shad eggs are expected to be salvaged in the Willamette slough.

This salvage operation was requested by and has the support of commercial fishermen. It is the second consecutive recent year of operation. Center of the shad salvage operation is at Domeyer's landing in the Willamette slough, adjacent to the Columbia River near Scappoose, Oregon.

The number of shad reported from Oregon waters fluctuates greatly from year to year. The egg-salvage operation is designed to help build up the shad population.

Salmon Liberations Announced

Large liberations of spring and fall chinook salmon and silver salmon of the 1955 brood stock took place during the month of May from three State hatcheries. Into Herman Creek, at the site of Oxbow hatchery near Cascade Locks, 1,210,500 fall chinook salmon recently have been released.

From the Big Creek hatchery near Astoria, 324,000 fall chinook salmon have been released into Big Creek, and 967,000 silver salmon have been liberated into Elk, Coon, Mud, and Pigpen Creeks.

At the Trask salmon hatchery near Tillamook, 49,000 fall chinook salmon have been stocked in Gold Creek and 357,000 spring chinook salmon have been put into the upper Trask tributaries.

Counting Blueback Salmon

An enumeration project on the blueback or kokanee salmon in Suttle Lake near Sisters, Oregon, is being carried out again this year with the installation of a new, improved trap 100 yards upstream from the site of the old dam at the outlet of the Lake. The trap was installed in early May, and some 8,000 young blueback salmon already have left the lake on the beginning of their journey to the Pacific Ocean. It was expected the fish would continue to leave the lake until late June.

This blueback enumeration is part of an investigation into the feasibility of using the Lake to rear blueback salmon prior to their seaward migration. The planted run of bluebacks in Suttle Lake is contributing materially to the sports catch in the Lake and also is a factor in the commercial catch in the Columbia River.

Last Fall several hundred adult bluebacks returned to



Fleet of commercial trolling boats at Westerlund moorage, North Portland, Oregon, prior to opening of the salmon season off the Oregon-Washington coast.

the Lake from a release of 100,000 fingerlings planted several years previously. The Fish Commission has liberated blueback salmon fingerlings in Suttle Lake each year since 1952.

Steelhead Captured and Released below Dam

Fish salvage operations conducted by Fish Commission of Oregon biologists at Faraday Lake on the Clackamas River recently have enhanced chances of a safe oceanward journey for over 170 adult, spawned-out steelhead.

Fish captured at Faraday Lake are trucked about five miles downstream in a portable live tank and are released at Bonnie Lure Park below River Mill Dam. From this point, the trip to salt water is unrestricted. While in the live tank, the steelhead are treated with malachite green, a chemical used to combat fungus disease which develops in fish eggs and young fish.

The Fish Commission is particularly interested in any tagged fish which might be observed during the salvage work. To date, two tagged steelhead have been captured. Both fish were tagged by the Fish Commission near Astoria, one on March 9 and the other March 15, during a tagging study conducted jointly by the Washington Dept. of Fisheries and the Oregon Fish Commission. The tagged fish had travelled over 100 miles before being recaptured at Faraday Lake.

Hatchery Procedures Being Evaluated

Gnat creek weir, on Gnat creek near Astoria, is now in production for its first full-scale experiments, according to M. T. Hoy, State Fisheries Director of the Oregon Fish Commission. The main purpose of the weir is to evaluate hatchery procedures, such as best time and methods of releasing fish, and to count all the fish going upstream and coming downstream.

From these counts, Fish Commission biologists will know how many small fish were produced. These results can be correlated with temperature, rainfall and other conditions to determine the best time of the year to release the fish and the best place.

Research Director Receives Degree

A doctor of philosophy degree in the field of fisheries was conferred upon George Y. Harry, Jr., Fish Commission of Oregon director of research, during commencement exercises at the University of Washington, June 9. His doctorate thesis was entitled "Analysis and History of the Oregon Otter Trawl Fishery".

Before assuming duties as director of research in 1954, Harry was stationed at the Fish Commission research laboratory at Astoria, where he was engaged in several aspects of marine fisheries research.



An eight-foot Manta Ray caught by the research vessel "N. B. Scofield" being hoisted onto a truck by Robert Ryan of the California Fish and Game Department, Terminal Island Base. The creature was taken on a 61-day trip to Peru, during which a study was made of water currents and temperatures in relation to fish migrations.

California Tuna Catch Shows Big Gain

Tuna landings in the Southern California area of San Pedro and San Diego during the period January 1 to June 23, amounted to 76,505 tons, which was about 25,000 tons more than in the same period of 1955. Most of the gain was accounted for by the bait boat-clipper fleet and albacore trollers, with purse seine landings showing a gain of only about 1,000 tons.

Prospects for tuna look good this season. Word is that imports are lower than usual due to poor fishing in Japanese areas. Early birds on the albacore grounds reported some good catches off Cape Collinette, 150 miles south of San Diego.

Fishing Boat "Defiance" Sinks

The 240-ton fishing boat *Defiance*, operating with a tuna fleet off the tip of Baja California, sank last month, but its crew of 12 was reported saved. The *Concho* rescued the 12, including the skipper, Capt. Ted Lucich of San Pedro.

The 107' *Defiance* was used as a bait boat by the tuna fleet, and was operating out of South Coast Fisheries, Inc., on Terminal Island.

Salmon Troller Fleet Fairly Successful

The troller fleet fishing for salmon, from Avila in the south to Eureka in the north, had only fair success during June. There were at least 500 boats based at Eureka, where fishing was consistently better than at any other place on the California coast. Bodega Bay was the next best spot. Small boats reported good catches, as the fish were taken close inshore. Fishing in Monterey Bay was poor.

By the first of July the big trollers had all left for the south. Nash Martin on his *San Martin*, Lloyd and Robert Myking of the *Ragnar M.*, Roy and Babe Johnson of the *Christe II* and Gus and Belle Johanssen of the *Belle J. II*, led the vanguard to the south. They were followed shortly by the *Leif II*, *Western Skies*, *Mandy*, *Rex*, *Ample II*, *Cecelia B.*, *Peso II* and *Venture II*, and hundreds of other boats.

New Owners for Fishing Boats

Several boats have changed hands in the Moss Landing area recently. Nick Kerr has purchased the salmon boat *Sue* from Mel Martin. Kerr formerly owned the *Ruby K.*, now renamed *Edith M.* and owned by Art Erwin. Clarence Harmon, a pilot for American Airlines, is fishing the *Mary Anne* in between trips to Chicago.

Armand Olson has joined Curt Olson on the *Ruby II* for the albacore season. The two men fished together several years ago when Curt owned the *Sonja*, lost off lower California last season.

Don Jacobsen, high line skipper of the troller *Norge* left on a trip to his native Norway the end of June. During the albacore season, his son John will fish the *Norge*.

The fourth boat John Hudson has built was launched in Moss Landing recently. The *Gladys*, a 26-ft. troller, is completely Fiberglassed, and is powered by a Chrysler Ace. Many of the parts were cast to order, and Hudson expects to start fishing her soon.

Ralph Brazil has installed a new Chrysler Crown in his salmon troller *Tramp Troller*.

Bert Holland and his wife Ruth have left for Magdalena Bay, Mexico, on their boat *Beruth*.

Navy May Make Oceanic Studies

The U. S. Navy has informed Senator Thomas Kuchel that it is interested in conducting oceanic studies between Baja California and Peru, the basic fishing grounds of the southern California industry. The American Tuna Boat Assoc. and the Scripps Institute of Oceanography have been contacted for suggestions as to types of measurements to make during the survey.

License Fees for Cannery Loaning Money

Los Angeles City Council President John S. Gibson has instructed the city clerk to look into the city license tax ordinance to determine requirements for fish cannery in advancing money and credit to fish boat owners. Gibson explained that city attorney opinions handed down recently require the cannery to pay a \$300 license fee for engaging in loaning money or advancing credit to fish boat owners.

He pointed out that circumstances arising in the industry are often peculiar and that the city clerk should make recommendations for adjustment of the ordinance to make more equitable license fees levied in these instances.

Mackerel Catches Ahead This Year

San Pedro's purse seiner fleet is more than 10,000 tons ahead of its 1955 pace in catches of mackerel for the first five months. The purse seiner fleet so far in 1956 has landed 14,290 tons of jack mackerel, compared to 1,600 tons in the same period last year, and 3,220 tons of Pacific mackerel, compared to 2,420 tons the year before.

The 1956 catch of anchovies is lagging to date, totaling only 10,000 tons for the first five months. In the same time in 1955, 13,100 tons of anchovies were brought in.

Shad Nets Catch Some Game Fish

A check of the commercial net fishery in Suisun Bay and the lower Sacramento Delta waters northwest of San



George Fukuzaki, skipper of the San Pedro, Calif. purse seiner "Stella Maris", and Ben Fukuzaki, co-owner (at left) accept a plaque recognizing their rescue efforts on behalf of the survivors of the "Western Explorer". Presenting the plaque are Mason Case, manager of the Fishermen's Cooperative (second from right), and Frank Manaka, skipper of the "Western Explorer", which sank during May.

Francisco Bay has indicated some destruction of sport fish, the Dept. of Fish & Game disclosed. The survey is intended to become part of the record on which the State Commission will determine whether commercial fishermen should be barred from the area.

Checking the nets on 29 out of 39 fishable days of the shad season, biologist John Skinner noted 5590 shad, 230 salmon (both commercial fish); and the following game fish: 1220 striped bass, 690 of them dead; 470 sturgeon; 9 steelhead. Thus, 22 percent of the catch consisted of game fish.

Millions of Salmon Planted

In years to come there should be plenty of salmon for commercial and sports fishermen alike on the California coast, if only a small percentage of the fish released this year survive the hazards which surround them. The California Dept. of Fish & Game announced that during recent months, millions of king salmon fingerlings were planted in three major northern California salmon streams.

During March 2,590,000 fingerlings were released into the Klamath River. In mid-April 1,000,000 kings were put into the Mokelumne River and another half million into the Russian River below the site of Coyote Dam.

Washington Seiners Expect Fair Salmon Season

Puget Sound waters opened to seiners June 18, with the majority of skippers predicting a fair year. The decrease in number of seiners operating in Puget Sound this season, closure of outside waters to the larger boats and hopes of at least a slight price increase, are considered favorable signs.

Consolidation of cannery operations on the North Puget Sound brightened the picture a bit for Dick Kink. Kink, skipper of the *Inventor*, explained the move should help two ways—first, in prices to the fishermen; and second, in reducing operating expenses of the canneries.

Regarding prediction of catch for the United States fleet, Pete Zuanich, Port Commission president and skipper of the *Andrew Z.*, pointed out that "this never has been a big cycle." Zuanich said a study of Fisheries Commission records has yielded a prediction of a catch of about a million and a half salmon this season.

"Shortage of experienced crew members is a big problem this year," said Martin Kuljis, skipper of the *New Moon*. Kuljis planned to go out "the end of June or first of July," but doesn't anticipate sizable catches until the last week of July and first week of August.

The skippers agreed there probably will be about 250 seiners in Puget Sound waters this season, quite a drop from the more than 380 last year. "If there isn't too much gear out, it can be a fair season," Kink said.

Promising Results with Mid-Water Trawl

Some promising results in offshore mid-water trawling were obtained in a 6-week cruise by the Fish & Wildlife Service's exploratory fishing vessel *John N. Cobb*, which returned to Seattle on June 22. More than 20 species of fish were caught in the mid-water trawls from the Washington Coast to northern Vancouver Island.

Fishing from near the surface to within a few feet of the bottom, the *Cobb* took mixed catches up to 5,500 pounds in 20 minutes. Largest catches were predominately hake, black rockfish and dogfish. In one 2-hour tow with the trawl at 37 fathoms in water depths of 62-70 fathoms, the catch included 1100 pounds of black rockfish and 320 pounds of hake. Up to 1800 pounds of dogfish were taken with the Canadian mid-water herring trawl off Vancouver Island, but no sizable schools of herring were located.

A Sea Scanar and a recording depth sounder were used to locate schools of fish in mid-water. It was apparent



Donald Horne's 52' x 14'6" x 6' "Ethel May", which fishes crabs out of Willapa Bay, Wash. during the Winter, and catches tuna and salmon in the Summer months. She is finished with International paint, and is equipped with 150 hp. Cummins Diesel with 3:1 Twin Disc reduction gear and 44 x 32 Coolidge propeller; Wall manila pot warp, Mustad hooks, Northhill anchor and Bendix depth sounder. RPM lubricating oil is used.

that an electronic fish finder is essential to successful offshore mid-water trawling, but extensive experience will be required for the operator to be able to identify species shown by different types of echoes.

Gill-Netters Begin Operations

Approximately 40 small boats pulled out of Swinomish Channel moorings at LaConner when the 1956 gill-net fishing season opened. Skagit Bay Fish Co. at LaConner provides the market for the bulk of the catches made by the LaConner fishermen, who expect to continue the gill-netting, except for small closure periods, until the season officially closes late in November.

Most of the LaConner boats will ply the waters around Fidalgo Island, except for the Bald Island drift area at the mouth of the Skagit River which has been closed by the State Director of Fisheries.

Told to Stop Fixing Minimum Salmon Prices

In an initial decision, a hearing examiner for the Federal Trade Commission told the Puget Sound Fishermen's Union and Vessel Owners' Association that "entering into 'Working Agreements' or 'Salmon Agreements' or any other agreement designed to fix prices of raw or fresh salmon was illegal; as well as interfering with the operation of any fishing vessel with the purpose of maintaining a price fixing agreement."

The order does not prevent any member of the owners' association, "acting individually," from negotiating with canners concerning prices; or any collective bargaining between union and employers concerning wages, hours or working conditions.

Seattle Landings for June

The otter trawl fleet landed 41 trips at Seattle during June, with 1,656,900 lbs. of fish being unloaded. This was 165,000 lbs. less than in May, but was half a million lbs. more than in June, 1955. Leading variety was true cod with 412,700 lbs., for a gain of nearly 150,000 lbs. over June of last year. In second place was ling cod, with 317,000 lbs.

The halibut fleet hit its stride during June, with the boats bringing in 3,994,000 lbs., for a gain of more than 350,000 lbs. over the catch in June, 1955. Besides halibut, the landings included 14,650 lbs. of rockfish, sablefish and cod.



Officials of the Del Monte Fishing Co., which has leased a Richmond, Calif. plant for whale processing operations and has chartered two whaling vessels. The men include Otto Weissich, vice-president; Thomas Caito, stockholder; John Caito, manager of the Richmond plant.

Whaling Resumed off California

By Two Eureka Vessels

Whaling operations were resumed recently at San Francisco for the first time since 1939. The 103' Eureka whaler *Dennis Gayle*, now sailing out of San Francisco, made the first kill. A single shot from a harpoon gun by Bill Bartow speared a 40-ton humpback just north of the Farallones—about 35 miles from San Francisco. In the next six days three other humpbacks were killed before the *Dennis Gayle*, an ex-Navy wooden-hulled cargo boat, was laid up for a week while further renovations were made in the local cannery.

The whaling enterprise was launched by the Del Monte Fishing Co., which has leased part of a one-time sardine reduction plant at Point San Pablo, Richmond, across the Bay. Officers of the company are Anthony Caito, president; Otto Weissich, vice-president; and A. E. Tratani, secretary-treasurer.

The firm has chartered the *Dennis Gayle* and her sister vessel, the *Donna Mae*, from Gibb Hunter, partner in a Eureka fish processing plant. The whalers operated out of Eureka until June, 1951, when Hunter's whale processing plant burned.

Regular captain of the *Dennis Gayle* will be Bill Bartow. Crewmen on the first voyage included Eric Nielsen, Douglas Campbell and George McAdams, all Eureka fishermen. For harpooning, Bartow uses a black powder charge, a steel harpoon, nylon line and supporting wire cable.

Hope to Catch Four Whales Per Day

The *Donna Mae* is expected to begin whaling soon, and when the Richmond cannery is fully operative, the two ships hope to bring in four whales a day. The season is limited to six months by law, starting May 1. The run to the cannery from the grounds, if whaling continues good off the Golden Gate, is about two hours.

The Del Monte Co. is cutting the whale flesh into fillets, which are quick-frozen and shipped for use in cat and dog food. Some of the whale meat is being chopped into bits for mink food, and the leavings go for fertilizer. The oil is being put into drums for shipment to paint makers. Wielding the flenser is Thorval Haugen, a native of Norway and a former Antarctic whaler.

The Del Monte Co. also has whaling operations on Vancouver Island, British Columbia. It plans an eventual expenditure of from \$60,000 to \$75,000 in improving its Richmond plant, including the construction of a 60' slipway for handling whales out of the water.

Connecticut Has Fleet Blessing at Stonington

Boats of the Stonington fishing fleet and the men who sail them were blessed by Most Rev. Bernard J. Flanagan, Bishop of the Roman Catholic Diocese of Norwich, in an impressive and solemn ceremony held on July 1 before an estimated crowd of 6,000 persons at Longo's Dock. Sponsored by the Southern New England Fishermen's Association, the ceremony was the first of its kind to be held at Stonington.

After the boats and men were blessed by the Bishop, a floral piece representing a broken anchor and commemorating ships and men of the fleet lost at sea, was placed in the water from the dragger *Jane Dore*. The wreath was tossed into the sea by Mrs. Erling Kristensen of Noank, wife of the skipper of the dragger *Nancy S*, which went down between Montauk and Point Judith last year and never has been found.

There was a water parade by the entire Stonington fleet, gaily decorated for the occasion, and the statue of St. Peter, designated by the men as their patron saint, was blessed. Capt. James Henry, skipper of the dragger *New England*, was general chairman of the fleet blessing arrangements committee.

"Marise" Catches Big Sturgeon

A 225-pound sturgeon, one of the largest ever to be brought into Stonington, was landed recently by the dragger *Marise*, skippered by Capt. Harold McLaughlin. The big fish was brought in to Bindloss dock, where it was loaded aboard a truck bound for the New York markets.

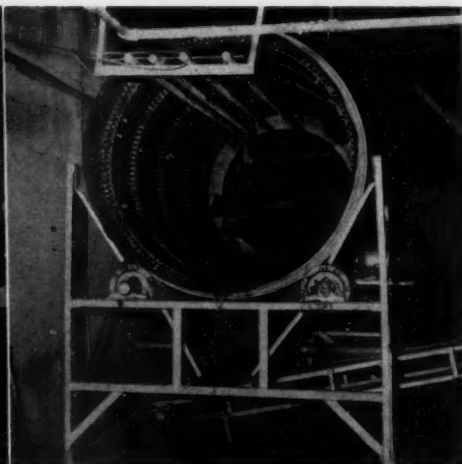
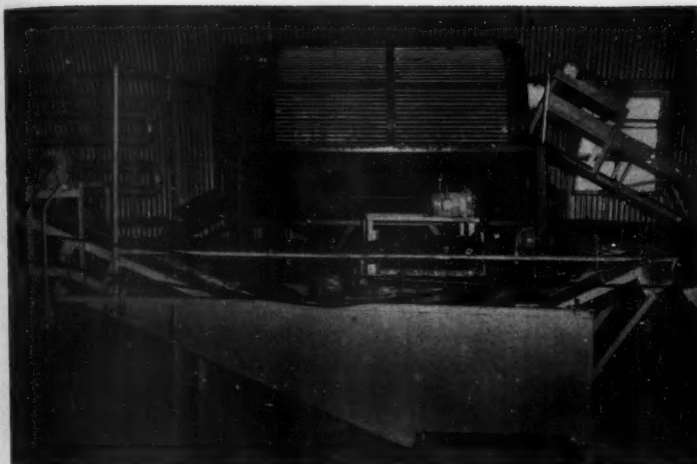
Lobsters Still Scarce

The arrival of warm weather in the Southern New England area has failed to bring any appreciable increase in Stonington's normally-lush lobster trade. Most of the larger dealers are bringing in their lobsters from Boston markets.

Some Stonington lobstermen blame the lobster scarcity on the fact that the waters have been slow in warming up, while others express the feeling that the number of short lobsters taken in recent years has resulted in the present shortage.



TAKING PART IN THE STONINGTON, CONNECTICUT FLEET BLESSING was the 81' "Jane Dore", from which was tossed a floral piece representing a broken anchor and commemorating ships and men of the fleet lost at sea. The dragger is the largest in the Stonington fleet, and is skippered by Capt. Theophilus Silva of New London. She has a 6-71 General Motors 165 hp. Diesel.



MECHANICAL OYSTER SHUCKER, such as is being used in Biloxi, Mississippi plants. The tumbler in the background, with its swiftly rotating mass of steel rods and baffles, separates the meat from the shells through a jarring, dropping motion. The conveyor belt in the foreground dumps the meat, small shells and grit shaken loose by the

tumbler into the flotation tank, where the shells and grit sink to the bottom and the oyster meats float on top and are scooped onto another conveyor which takes them into the processing room. At right, forceful streams of water inside the tumbler help separate the meats from the shells.

Mississippi Plant Packs Gulf-Caught Tuna

The DeJean Packing Co. of Biloxi, owned by Elmer and Carroll Williams, packed 1000 cases of Gulf-caught tuna recently for Cecil W. Drake. The fish were caught by Drake's tuna clipper *Milmar* and the Fish and Wildlife Service research vessel *Oregon*. Mr. Drake owns a fleet of tuna clippers which fish the Gulf, Caribbean and Pacific waters.

Long-line fishing was used in landing the tuna, which averaged from 75 to 150 pounds. The halved tuna, after 6 to 7 hours in the steam boxes, were dumped on the tables where the men and women wielded knives and cleaned the choice meat from the bone, skin and dark meat.

Sixty percent of the tuna is lost in the process of cooking, cleaning and trimming. The remaining 40 percent passes beneath a chopping machine, the only noticeable piece of special equipment installed by the DeJean Company.

Drake, speaking for his partner John Butler and their company, Marine Sales and Service of Pascagoula, stated: "If the demand for the product warrants, we'll bring in Pacific tuna clippers to supplement the Gulf fleet. The tuna are present in such abundance, and the quality of the meat is such that a sizable tuna industry could be built on the Mississippi Gulf Coast."

Biloxi's factorymen and the multitude of workers in the seafood plants would welcome the establishment of a tuna canning industry. This would provide a continuous work-year, as tuna could be processed when the shrimp and oyster seasons were slack.

"Oregon" Catches Red Snapper and Groupers

An uncharted rock ridge which gives evidence of being good fishing grounds was discovered by the Fish & Wildlife Service research vessel *Oregon* on a shrimping trip in the Gulf of Mexico recently. Harvey R. Bullis, Jr., field party chief, stated that echo recorder tracings showed good indications of bottom fish along the entire ridge. The vessel spotted the ridge approximately 150 miles south of Galveston, Texas.

The *Oregon* caught 1600 pounds of red snapper and 300 pounds of varied groupers on handline stations. The seasonal prevalence of shrimp was studied on the cruise, which covered the northwestern and north-central Gulf.

In all drags beyond the 200-fathom curve, large red shrimp were taken, with smaller deep-water shrimp, brown grooved shrimp and hump back shrimp caught at varied spots.

Mechanical Oyster Shuckers Prove Successful

All of Biloxi's oyster canning plants installed one or more of the new mechanical oyster shuckers during the 1955-56 season, and reports from the majority were of successful operation. Mechanical shuckers have not been worked full-time in the plants, but merely as a supplement to the human shuckers.

In some cases there has been a problem of oyster meats being cut and smashed by the action of the falling shells in the tumbler. However, through continued use of the machines and trial and error modifications, these "bugs" gradually are being eliminated.

The oyster shucking machine denudes all sizes of oysters, and it is believed that the yield per barrel with the machine is far better than the yield produced by the human shucker. The mechanical shrimp peeler has the same advantage—it peels shrimp of all sizes.

South Carolina Inshore Menhaden Fishing Operations Protested

Affidavits signed by several Myrtle Beach residents were sent recently to the commander of the Coast Guard, reporting that two menhaden vessels were observed operating just behind the breakers at Myrtle Beach. It was stated that the operation of these vessels beyond their legal limit, will, if continued, result in harming both commercial and sport fishing. The vessels were said to be operating within the migratory area of edible fish.

Trawler "Bess" Wrecked

Active life of the 46' shrimp trawler *Bess* ended ingloriously June 21 on the beaches of Kiawah Island. Stripped of all salvageable gear, including deck cleats, engine, nets, mast, booms and running lights, the ship has been abandoned.

The *Bess*, for years a member of the Adger's Wharf shrimp fleet at Charleston, grounded after a shrimp net had fouled the vessel's propeller and a rising tide had cast the ship ashore. The vessel had been sold only a few months ago to Herbert Fulton of Folly Beach.

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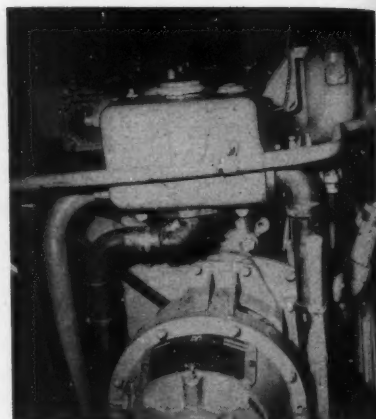
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JULY, 1956



38' fishing boat "Mr. Andy", owned by Dr. Pastor of Havana, Cuba. At right is her DIXEC Hercules 6-cylinder Diesel, rated 115 hp. at 3000 rpm., and fitted with Twin Disc power take-off. The "Mr. Andy" was built by Riverside Boat Works of Miami, Fla., and was packaged by Auto Marine Engineers, Miami. She is equipped with 22 x 18 Columbian propeller, 1 3/4" Monel shaft, and Paragon reduction gear.



Florida Fishermen Oppose Moving Target Range Inshore

Gov. LeRoy Collins last month was asked to use his influence in blocking a proposal by the Air Force to move its target practice range in the Gulf of Mexico 10 miles closer to Florida's shoreline.

A petition bearing the names of 60 commercial and sport fishermen and sponge industry representatives was brought to Tallahassee by Sen. Randolph W. Hodges, Cedar Key, and Rep. Hal Chaires, Oldtown. Chaires, who attended a protest meeting, reported the fishermen want the target range moved 25 miles farther west.

Both legislators said that if the range is moved 10 miles closer to the coast, it would bottle up deep-sea commercial and sports fishing, as well as impair the sponge industry's diving activities. The Rock Island wool sponge is found in the area that would be affected by the change.

Against Admitting Greek Spongers to U. S.

Opposition to a proposal for admitting 100 Greek sponge fishermen to this country so they can work in Florida waters, was expressed recently by Ernest E. Powell of South Miami. He asserted that there are plenty of American fishermen and divers for the sponge industry, and that only the low price received for sponges keeps them from devoting more time to it.

Powell, a native Floridian, has been fishing all his life. With his son Everett, he operates the Ernest E. Powell & Sons fishing business, specializing in sponges.

"Bowers" Searching for Sardine-Like Fishes

The mission of a two-week cruise of the Fish & Wildlife Service research vessel *George M. Bowers*, which de-



The 33' "Genie-Lee", owned by Capt. Eugene Steeger and used for commercial clamming on the Great South Bay out of Lindenhurst, N. Y. She is powered with a Chrysler engine.

parted from Miami on June 13, was to be preliminary scouting and experimental fishing for sardine-like fishes.

Observations over a period of time have revealed the presence of several species of sardine-like fishes in the Gulf of Mexico. The area selected for the preliminary work is Florida Bay and westward to the Dry Tortugas Islands. A trap-lift net, bait net, dip nets and other gear were to be used to take representative specimens.

During an April cruise, the *George M. Bowers* conducted gear research operations with experimental mid-water trawls and with a recently developed telemetering depth sounder. These tests were made in offshore Gulf Stream waters between Fort Lauderdale and Key Largo.

Continued research in single boat mid-water trawling devices by the Fish & Wildlife Service's Gear Research Unit at Coral Gables, Florida, has indicated that practical mid-water trawls should be lightweight and strong, easily handled and maneuverable over a range of speeds, and that the trawl depth must be controllable at all times. Systematic investigations and observations of trawl behavior with undersea television and by divers with cameras have resulted in some improved designs. During this cruise a 30' cotton trawl and 40 and 50' nylon nets were observed to be performing as designed under experimental fishing conditions.

New Caterpillar Parts Depot at Hialeah

Caterpillar Tractor Co. has announced formation of a new parts depot at Hialeah, northwest of Miami. It will provide emergency parts service for south Florida and export dealers in South America and the Caribbean.

Long Island Clam Decline Blamed on Green Crab

New research into the cause of the decline of soft clams which once abounded along the shores of Long Island, has proved that the answer is apparently not connected with the vanishing eelgrass, as was once suspected. The theory now is that the clams have been the prey of the little green crab, popular as blackfish bait. The green crab is present in teeming numbers as the result of a cycle of warm Winters.

Landings Increase in Value

Receipts of fish and shellfish from fishing craft landing in the marine district of New York during March totaled 3.2 million pounds valued at \$732,000 to the fishermen. Compared with the same month of last year, this was a decrease of 27 percent in quantity but an increase of 3 percent in value. Reduced landings of butterfish, fluke, scup or porgy, tilefish and whiting accounted for most of the decline in production.

Virginia Testing New Suction Dredge for Removing Drills

The oyster drill or screwborer is one of the worst enemies of oysters in Chesapeake Bay, and recently the Fish & Wildlife Service has been planting gaily-colored oyster drills on an experimental plot of ground across the river from the Fisheries Laboratory at Gloucester Point. This strange procedure will help the scientists determine how effectively a new suction drill dredge, being developed by Fish & Wildlife personnel, can remove these pests from planted oyster grounds.

Dr. J. L. McHugh, director of the Laboratory, and Dr. J. D. Andrews, chief oyster biologist in Virginia, were on deck when thousands of marked drills were scattered over a measured area. Then the suction drill dredge began plying back and forth over the area sucking up marked and unmarked drills indiscriminately. From the ratio of marked and unmarked drills in the catch, the scientists can estimate how many drills were on the ground, and how effective the dredge is in removing these killers.

On the initial test, several mechanical improvements were suggested, and a five foot suction bar is now being built to replace the two and one-half foot bar used in the test.

Haul Seine Use not Restricted

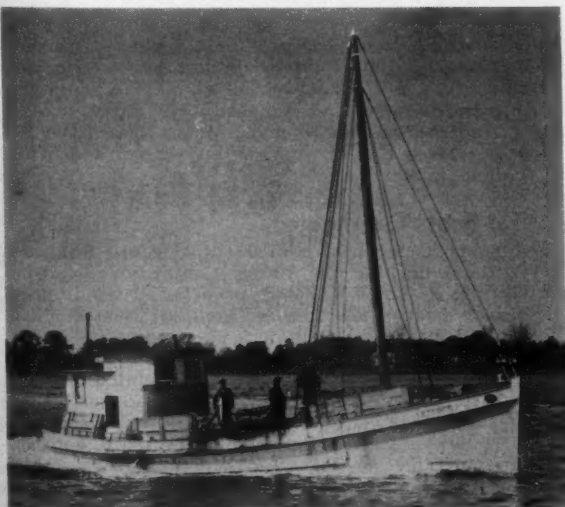
The Commission of Fisheries at a recent public hearing in Newport News did not adopt the proposed rule to prohibit the taking of fish with haul seines, gill nets or other stationary nets in the waters of the Great Wicomico River above Tipters Bridge.

The Commission, however, instructed its inspectors to pay unusual attention to see that the laws are enforced in this area. The State law limits the use of haul seines to one-fourth the distance across a river.

Menhaden Fishing Good

Fishing for menhaden in the Chesapeake Bay opened this month, and 15 men from Tangier have become members of various fishing crews in Reedville. Twenty other Tangier fishermen have gone to Lewes, Delaware, and Amagansett, New York, where they will catch menhaden for the Smith Meal Co.

According to reports, menhaden fishing is good in the Chesapeake Bay. The latter part of June, 15 boats were fishing below Tangier Lighthouse, where they made some good catches, from 400,000 to 800,000 a week.



58' oyster dredger "L. B. Travis" owned by Cuthbert & Hughes, Inc., Bohannon, Va., and powered with D13000 Caterpillar Diesel.



The 39' x 13' x 3' fisheries patrol boat "Mary Caroline" recently was put into service by the Massachusetts Department of Natural Resources. She was designed by Bertram Frost and built at the Frost Boat Works in South Portland, Me. Powered by a 6-cylinder General Motors inclined Diesel, the "Mary Caroline" has a speed of 14 knots at 1800 engine rpm.

High Prices for Peeler Crabs

Peeler crabs in Tangier waters are still very scarce, but prices, although fluctuating at times, are very good. They started out this month at five cents apiece, then rose to seven cents, but since have dropped to five cents.

Crabbing prospects look good for July. Thousands of little crabs are now crawling on the crabbing grounds, and by the middle of the month they will have grown to marketable size.

Hampton Roads Area Landings

During the month of June, Hampton Roads area fish landings amounted to 1,549,000 lbs., which was 600,000 lbs. more than in June, 1955, but was 1,700,000 lbs. less than in May of this year. The pound net catch for this June was 1,467,500 lbs., for a gain of 600,000 lbs. over the same month in 1955. Biggest volume fish in the pound net landings was croaker, with production of 940,700 lbs., followed by sea trout, with 288,400 lbs.

Boston-Based Research Vessel

Tests Antibiotic Ice

During a recent 12-day cruise of the Fish & Wildlife Service vessel *Delaware*, a total of 25 tows was made with a standard No. 41 trawl, for groundfish samples. The fish were iced in various antibiotic ices, and temperatures during storage recorded, by means of a multi-stage potentiometer. Cooling rates of haddock and cod in salt-water ice and fresh-water ice were obtained.

The first half of the trip was devoted to exploration for scallops in the 50-100 fathom depth range in the vicinity of Georges Bank. Procedure followed was to make drags in successively deeper water, outward from known productive scallop bottoms. Gear used was a standard 11-foot scallop dredge. In no case were scallops taken from deeper than 55 fathoms. Of interest was the abundance of dead ocean quahog shell in deeper waters.

Landings Five Million Pounds Ahead

Boston fish landings for the first half of 1956 totaled 80 million pounds, as compared to only 75 million pounds in the same period of 1955.

Fish Plants Resume Operations

All processing and packing plants at the Boston Fish Pier resumed operations June 26, but the Commonwealth Ice & Cold Storage Co. continued idle as the result of a labor dispute.



32' x 8' lobster boat "Alwilda M." owned by Herman Anderson of Corea, Maine. She was built by Harvey Church of Steuben, Me.

Maine Lobstermen Set Minimum Prices

About 225 lobstermen, meeting in Rockland last month for the convention of the Maine Lobstermen's Association, took decisive steps regarding lobster prices and advertising of lobsters nationally.

They voted on a minimum price for shedder lobsters of 35 cents and a minimum price for old shell lobsters in the shedding season of 50 cents. They were unanimous in their decision to seek an advertising program for Maine lobsters, such as the Maine Sardine Industry now operates.

At the convention, lobster experts had a chance to compare deep-sea lobsters with "inshore" lobsters to try to determine whether or not they are the same breed. The president of the Maine Lobstermen's Assoc., Leslie Dyer; Harold W. Look, lobster dealer of Rockland; the dean of Rockland's lobster industry, Albert C. McLoon; Sea & Shore Biologist Robert Dow; and Wendell S. Hadlock studied the two breeds and pronounced them the same. Look wants them protected as "breeding stock" of the Maine supply of lobsters.

Among the guest speakers at the convention were Governor Muskie, who talked on the St. Lawrence Seaway project and what advantages it will have for New England.

President Dyer was presented a testimonial scroll for his outstanding work and service to the Lobstermen's Association and the industry by Deputy Sea & Shore Fisheries Commissioner Ronald Green.

Sardine Herring Appear

Sardine herring early last month appeared in Maine's coastal waters, and the canning season, delayed a month, finally got under way on the 7th. Forty-two factories, from Portland to Jonesport, started up their machinery.

John Toft, vice-president of the R. J. Peacock Co., said the herring seined for the Company's Portland factory were of good size and elegant quality.

Holmes Packing Corp. of Rockland touched off the sardine packing season with 600 bushels caught by Sam Morton of New Harbor. The herring were landed by Capt. Elliott Wotton of Friendship with the carrier *Mary Anne*.

Rockland plants were plagued with a shortage of help opening day, with less than 50 percent of the needed packers answering the whistles calling them to work.

Maine sardine cannerys have been told to expect greatly increased production costs over the 1955 season. A raise in the minimum wage from 75¢ to \$1 an hour, plus boosts in costs of oil, cans, cases, salt and freight all add up to a substantial figure.

Richard E. Reed, executive secretary of the industry, stated that it is now costing Maine cannerys about \$2 a case more to pack keyless and \$2.50 more for keys than it did in 1950 and nearly triple the 1933 figure.

Woodward Honored for Rescue at Sea

An Award of Merit from the Fish and Wildlife Service and a cash award of \$500 were presented June 8 to Charles H. Woodward of South Portland, before a large group which included Federal employees at the Boothbay Harbor research station. Making the presentation was D. R. Gascoyne, regional director of the Fish & Wildlife Service's northeastern region, with headquarters in Boston.

Mr. Woodward was cited by the Fish & Wildlife Service for the major part he played in an after-dark rescue of five fellow crew members on October 4, 1955. The five men were working from the research vessel *Theodore N. Gill*, setting nets from a skiff. The skiff became disabled and the men were drifting helplessly toward the rocky ledges of Star Island.

Mr. Woodward, Second Officer on the *Gill*, enlisted the aid of the seiner *Providenza*, also operating in the vicinity, but this vessel was unable to approach close enough to the disabled skiff to cast a line aboard. Finally Woodward succeeded in rowing a light boat through open, rough water to carry a line from the *Providenza* to the drifting skiff. Both boats were towed to safety by the *Providenza*.

"Metacomet" Makes Second Cruise

The exploratory vessel *Metacomet* left Boothbay Harbor on May 29 for a second cruise to sound the coastline and Gulf of Maine waters for herring and to sample schools located with a midwater trawl. She was to return June 6.

On the vessel's first cruise which ended May 18, small traces of schooled fish were recorded in St. Andrews Bay, between Portland Lightship and Boon Island and near Race Point, Cape Cod.

Rockland Harbor to be Dredged

President Eisenhower recently signed a bill providing \$710,000 for dredging Rockland harbor. The project, long sought by Rockland and State officials, calls for dredging a channel along one and a half miles of the northern and central waterfront, 14 feet deep except for the central quarter mile which will be 18 feet deep. The channel will vary in width from 100 to 150 feet.

Plans also call for another channel 18 feet deep and 100 feet wide leading to the vicinity of the General Foods marine base in the southern part of the harbor. The dredging will make possible a new municipal pier in the Lermond's Cove area.

New Dragger Being Built

A new 83' dragger for Capt. George Fisher of Oak Bluffs, Mass. is under construction by Harvey Gamage, So. Bristol. Of Dwight Simpson design, the vessel will be powered with a V-12 Cummins Diesel.

Early in June, Gamage launched a 40' party boat for Capt. Arne Pedersen of Hyannis, Mass. Named the *Hyannis*, she has a 6-71 General Motors Diesel and White Surecho depth sounder.

Several Boats Overhauled

Fishing boats recently hauled out at Story Shipyard, So. Portland, include the Harris Company's *Vagabond* and *Theresa R.* which had their propellers reconditioned. The *Elinor & Jean*, Capt. Otis Thompson, was caulked, painted and fitted with new deck sheathing; and Harris' *Andarte* had new rigging, hull sheathing and painting.

The sardine carrier *Ernest Lowell* was painted throughout with Henderson & Johnson finishes, had her rudder rebuilt and a new 2½" Tobin Bronze propeller shaft installed. She is owned by Seaboard Packing Co. and was moved from Lubec to South Portland this year.

Richard McVane of Long Island, Me. recently repowered his 38' sardine seiner with a Red Wing Meteor 110 engine, having 2:1 Paragon gear. The engine was sold by Harbor Supply Oil Co., Portland.

Five More New Hatteras Shrimp Trawlers

from the Carolinas to Texas

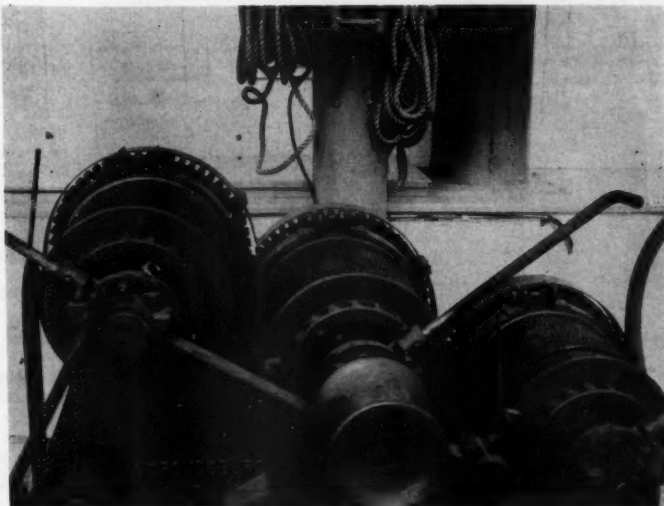
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STROUDSBURG HOISTS

- MISS EDISTO—Edisto Beach, S. C.
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- BEVERIDGE—Beaufort, N. C.
- MISS DOROTHY—Savannah, Ga.

Built by Morehead City Shipbuilding Corp., these five new trawlers are equipped with Model 515½-T, 3-drum Stroudsburg Hoists. Their owners, like hundreds of others all along the coast, know they can depend on Stroudsburg for economical, trouble-free service.

Stroudsburg Hoists are made in single, double and triple drum models. Friction drums have ratchet, pawl and brakes with interwoven linings. They are engaged by internal thrust cams with friction plates. Pinion shaft extension available for mounting engine drive in either rotation.



Model 515½-T Stroudsburg Hoist aboard the "Beveridge"

Write for full details.

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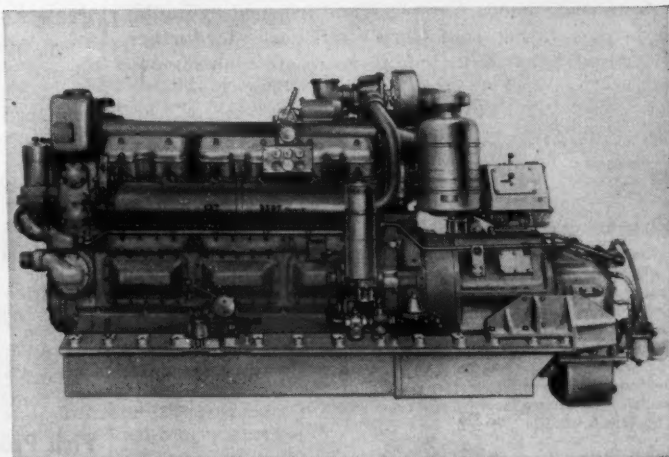
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	D397 (Illustrated)	D375
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Turbocharged.....	550	300
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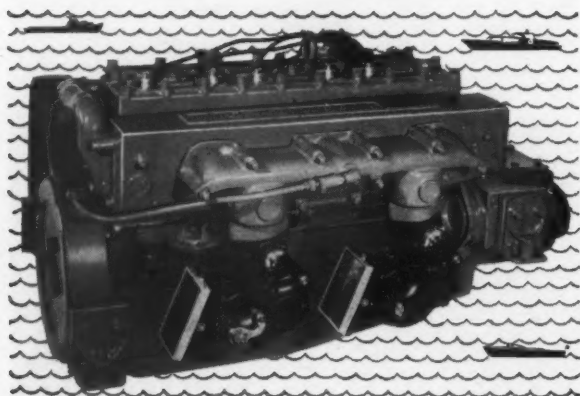
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NEW! Chris-Craft 175-hp marine engine



Model MCL, 175 hp

... packs a wallop, yet weighs only 940 lbs.!

Think of it—an engine developing 175 hp at 3400 rpm, weighing only 940 lbs., and so compactly designed that it fits into the smallest space!

Thoroughly tested under marine conditions, the *Model MCL* gives your runabout, utility boat, or cruiser a new smoothness and ease of operation, with high torque at low rpm, unexcelled idling characteristics, rugged dependability in use.

Horsepower for horsepower, you can't beat a compact, power-packed Chris-Craft marine engine! Choose from 60, 95, 105, 120, 130, 131, 145, 158, and 200 hp models—and now, the all-new 175-hp Model MCL! Most are available with reduction drives, opposite rotation, and famous *Chris-O-Matic* (electric hydraulic clutch control). See your Chris-Craft dealer for further information. Or write us today!

SPECIFICATIONS

Cylinders.....6	Piston displacement.....339.2 cu. ins.
Bore.....4 ins.	Compression ratio.....7.22:1
Stroke.....4½ ins.	175 hp.....at 3400 rpm

FEATURES

Chris-Craft Model MCL 175-hp engine features: specially designed manifold for high efficiency; water-jacketed intake for smooth 500 rpm idling; 291.58 foot-pounds of torque at 1800 rpm; corrosion resistant throughout; three-pinion, high-ratio reverse gear for dependability; full-rotating exhaust valves for longer valve life; pressure-fed bearings; high lift camshaft; latest type self-priming fuel pump (also fitted for hand priming); scientifically designed combustion chamber, high turbulence for complete use of the gas mixture; aluminum alloy pistons with full-floating pins and the most advanced piston ring combination; simple, compact, dependable three-bearing reduction gears in ratios of 1.50:1 and 2.03:1 available (also opposite rotation).

Chris-Craft

MARINE ENGINE DIVISION

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WORLD'S LARGEST BUILDERS OF MOTOR BOATS

Provincetown Fleet Blessed In Colorful Ceremony

An estimated 10,000 persons jammed the new and old town wharfs on June 24 to witness the 9th annual blessing of the Provincetown fishing fleet. The entire fleet, bedecked from bow to stern with colorful flags and laden with guests and relatives, passed single file past the tip of the wharf and received individual blessings for safety of crew and ship from Bishop James L. Connolly of Fall River.

General chairman of the blessing committee was Arthur B. Silva.

Lobster Fry Liberated

More than 10,000 fourth-stage, bottom-crawling lobster fry were liberated off Negro Ledge in Buzzards Bay on June 19 by John T. Hughes, lobster culturist for the State. The fry were the first to be raised at the Oak Bluffs hatchery from the supply taken in early May from the large lobsters brought in to MacLean's fish establishment in Fairhaven.



Capt. Warren B. Vincent of Woods Hole, Mass., owner-skipper of the 74' dragger "R. W. Griffin, Jr."

Research Boat "T-79" Has Shakedown Cruise

Scientific personnel from the Woods Hole Fish & Wildlife Service Laboratory went on the first research cruise of the T-79 recently. The vessel was found to be adequate for line trawling and fish tagging purposes.

The area of investigation was "Small Mussels", 18 miles southeast of Pollock Rip light vessel. Three sets were made, each consisting of one tub of line trawl gear. The bait used was chopped frozen herring. A power gurdy was used to haul the trawl aboard.

A total of 65 scrod and large haddock were tagged through the gill cover with Petersen disc tags.

New Research Ship to Study Hurricane Causes

The Woods Hole Oceanographic Institution commissioned its new 125' research vessel *Crawford* at ceremonies held on June 30. She is the first ship especially equipped to study the causes of Atlantic hurricanes in their genesis regions, and is a converted Coast Guard cutter.

New Jersey Clam Strike Settled

Settlement of the three-weeks-old Snow Canning Co. strike was effected at a meeting held in Wildwood on June 6. The company agreed to a price of \$1.75 for a heaped bushel of clams.

Work resumed on a normal schedule on the 7th of June. The contract is for one year.

Fish Production Increases

Receipts of fish and shellfish at New Jersey ports during March totaled 3.7 million pounds, valued at \$597,000 to the fishermen. Compared with the landings reported for March of last year, this was an increase of 17 percent. Larger yields of surf clams and oysters accounted for most of the gain.

Surf clams led all other items in volume landed during the month, but were exceeded by both fluke and oysters in total value.

Gloucester Holds Annual Fishing Fleet Blessing Ceremonies

More than 1,000 fishermen and their families marched in a two-mile procession on June 24 as Gloucester observed the 12th annual blessing of the Portuguese-American fleet. About a third of the thirty-vessel fleet was in port to receive the blessing bestowed by the Rt. Rev. Augustus Hardegan of Marblehead. Floral pieces were cast into the ocean in honor of the scores of Gloucester fishermen who have died at sea.

The guest of honor was Carlos de Sousa Morais, Portuguese consul from New Bedford, representing Portuguese Ambassador Louis Esteves Fernandes of Washington, D. C. Other guests included Mayor Beatrice K. Corliss, members of the City Council, acting City Manager Kenneth S. Webber, members of the Portuguese diplomatic corps and city and State officials and church dignitaries.

Honorary chairman of the Blessing of the Fleet Committee was Monsignor Stephen E. DeMoura, pastor of Our Lady of Good Voyage Church and originator of the blessing ceremony in Gloucester. General chairman was Capt. Cecilio J. Cecilio.

St. Peter's Fiesta

Religion, sports and merry-making combined July 1 for a full-day wind-up to the three-day, 25th anniversary St. Peter's Fiesta. The 700-pound statue of St. Peter was carried over a three-mile route on the shoulders of eight of the fishermen.

Bishop Jeremiah J. Minihan, other members of the clergy, Fiesta officials, and the Knights of Columbus boarded the seiner *Saint Ann* and sailed to the middle of the harbor, to conduct the blessing rites. While the committee boat was being positioned, 50-odd boats of the Italian-American fishing fleet sailed out to the breakwater. From there, they passed single file past the *Saint Ann*, each in turn receiving a blessing.

The seine boat race wound up the sporting events for the 1956 Fiesta. The winning seine boat team was captained by Stephen Sinagra, with Joseph Verga as co-captain.

Capt. Leonard Linquata was chairman of the Fiesta Committee.

"St. Francis" Crew Rescued

The 60-ft. dragger *St. Francis*, Capt. Tom Scola, caught fire early last month off the Highlands, ten miles from Provincetown. Her skipper and three crew members, all of Cape Ann, escaped from the craft and were rescued by the Gloucester dragger *Ave Maria*, Capt. Antonini Ciulla. The *St. Francis* sank about a

mile west of Peaked Hill Buoy off Provincetown.

Layover Will not be Cut

Principal boat owners in Gloucester through a spokesman on June 4 said they would sign new labor-management contracts with the Gloucester branch of the Atlantic Fishermen's Union on the same terms as a contract that expired on the 1st.

Owners had hoped to reduce the layover period in port from four days to three, to give a couple more trips per year. However, Port Agent Alphonse F. Hayes stated that the union fishermen want to leave that situation as it is.

Get Ready for Pogie Season

Pogie or menhaden seines were being readied along Gloucester's waterfront last month. At the Linen Thread Co. plant, menhaden net-conditioning was going on full blast last month, with a half-mile-long seine from the *Puritan* stretched out in the rear of the plant.

The seining fleet was out in full force late last month when the pogie schools were first sighted.

"Eagle" Lands Million Pounds

A total of 1,067,000 lbs. of fish, mostly whiting, were landed by the dragger *Eagle* during the month of June. The *Eagle* made six trips, including two of 200,000 lbs. each.

Get Auxiliary Engines

A new Model LD1 Lister-Blackstone air-cooled Diesel engine for operating auxiliary generator and bilge pump, has been installed on the *Morning Star*, owned by Capt. Tony Parko of Gloucester. A similar engine has been placed on the Gloucester dragger *Etta K*.

Leonard Linquata Honored

Capt. Leonard Linquata was presented a plaque last month in recognition of his 25 years association with the Shell Oil Co., as manager of the Progressive Fish Wharf, Inc.

Shell officials taking part were metropolitan Boston district manager George T. Hopkins, David W. Muckle, fuel oil jobber representative, and Dominic N. Antonucci, marine and industrial representative.

Capt. Manuel G. Silva

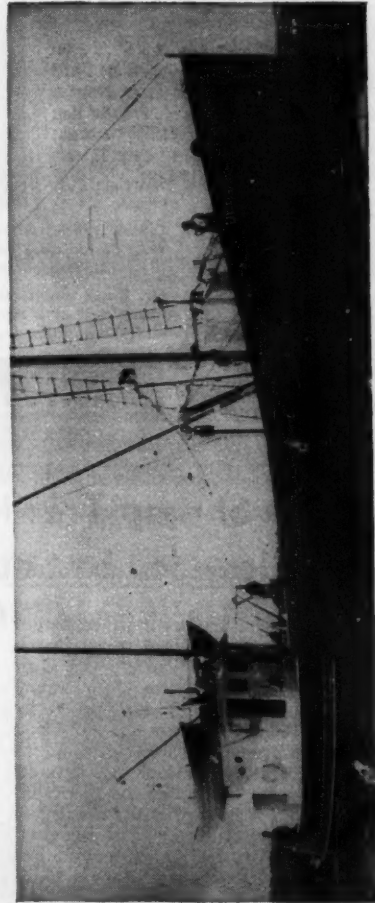
Capt. Manuel G. Silva, 82, retired Gloucester skipper, died recently. He came from the Azores as a young man to begin his fishing career in Gloucester. Some of the vessels under his command were the *Elsie G. Silva*, and the *Clara G. Silva*. The last one was the *Mildred Silva*.

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"Snow-Nabstedt reduction gears
functions well under all conditions
and wear placed with its performance."
says Moses Schonfeld of New York
City, owner of the Debbie & Jo-Ann.

The 78' scallop dragger Debbie & Jo-Ann, operating out of New Bedford, Mass., has reported many profitable trips with trouble-free gear operation. The Debbie & Jo-Ann is equipped with a Wolverine-Waukegan WM190S diesel engine with a SNOW-NABSTEDT 3:1 reduction marine gear.

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August 1951 . . . 28 fishing trips with
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SAVINGS IN FUEL COST . . . \$ 89.00

IN ITS 4th SEASON AND STILL GOING STRONG . . . the EVA MARIE, Maine-built lobster boat owned by Wesley Bracy, Cranberry Island, Maine.

Wood hull: 38' x 10' 4" x 3' 6" . . . Re-powered 1952; 100-hp Graymarine Diesel Six-D427, 2:1 reduction gear, replaced 150-hp gasoline engine . . . Propeller size: 24 x 18 . . . Engine speed: 2200 maximum; cruising, 1800 rpm . . . Boat speed: 12 knots maximum; cruising, 10 knots.



Lobster fishing is hazardous, because in hauling traps, the boat must be run close inshore where there is danger of being driven on the rocks. Dependability in the engine is all-important.

Mr. Bracy reports that his Graymarine Diesel has logged 8,000 hours—and at a saving of 60 per cent in fuel costs, as compared with the gasoline engine it replaced.



GRAYMARINE



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Texas Shrimp Trawlers Have Been Handicapped by Squally Weather

Windy weather with squalls over the area, capped by a small hurricane in the central and north Gulf the latter part of June, sent shrimp production for the month down by nearly 300,000 pounds as compared with the preceding 30-day period. A total of 1,156,200 pounds of heads-off shrimp were landed at the principal ports from May 25 to June 25.

The lower Gulf ports of Brownsville and Port Isabel were well out in front, with Aransas Pass a close second. Ninety-six percent of the shrimp landed in these areas was brown grooved, with 47 percent being less than 20 count. The remainder were white shrimp of low count from inshore Gulf waters. Shrimp landed in the central and north coast ports were 73 percent brown grooved.

Shrimp trawler crews are optimistic with reference to late Summer and Fall prospects. Small shrimp, both white and brown, are plentiful all along the coast.

Food Fish Production Light

Production of food fishes continues below average, as compared with former years. Speckled sea trout and red drum have been scarce in the bays. Black drum were plenti-

ful early in the Spring, but these fishes have migrated from the shallow bays to the deep Gulf.

Mackerel and kingfish are at their peak in the Gulf, but only a few are being taken on hooks. No commercial netting for these fish is carried on at present. Unfavorable weather has reduced the catch of red snapper and other deep-sea fish to a fraction of average.

Shrimp-O-Ree in September

The annual Shrimp-O-Ree celebration which has been held the first week in July for the past several years, has been delayed. Donald Belken, president of the Aransas Pass Junior Chamber of Commerce, announced the dates as September 1, 2, and 3.

Delbert Smith was elected general chairman of this year's celebration.

Invention May Aid Shrimpers

Warren O'Kane of San Antonio has developed a gadget which he says bids fair to revolutionize the shrimping industry. O'Kane, who operates a boat out of Corpus Christi, has found it difficult to discover what is happening to the trawls as they are dragged along the

floor of the sea. After studying these problems, he decided that if an instrument could be developed that would show whether the net was under strain, it should be possible to locate shrimp schools, keep from tearing up nets and save time and fuel.

He has installed test models on the *Bondage*, Capt. Johnny Wright of Rockport, and on the *Donna Jean*, Capt. Arthur Miller of Fulton. Experiments have shown that a snagged net is easily detected by a sudden jump in the reading on the recording tape. When the net is filling with shrimp, the reading increases slowly. Another reading shows when a hole has been ripped in the net by sharks.

Port Lavaca Area Channels

The House Public Works Committee has approved \$9,944,000 for the Matagorda Ship Channel project at Port Lavaca, and an additional \$412,000 for a channel from Lynns Bayou to Port Lavaca. These projects would furnish a channel through the barrier islands and reefs to a 100-mile section of the coastline now without a deep-water or safe channel connecting inside waters with the Gulf of Mexico.

The shrimp fleets of Crawford Packing Co. and others at Palacios, the boats of Key-Daniel Seafoods Co., and the Clegg Shrimp Co. of Port Lavaca, the seafood producers of Port O'Connor, Seadrift, Fulton, and Rockport, all make the long trip along the Intracoastal Canal to Port Aransas before finding a passage to the Gulf of Mexico.

More Docks at Old Ingleside

Albert C. Moore and Co. of Old Ingleside are enlarging their docks and boat basins to accommodate up to 130 commercial and fishing boats. The present location of the Old Ingleside docks has been used by fishing boats, shrimp trawlers, and seiners for more than 100 years.

The Moore Company has operated commercial fishing boats, produced seafoods, and acted as distributors, and wholesale and retail dealers in marine supplies and equipment at the present location for 15 years.

Freeport Fleet Blessing

The first blessing of the shrimp fleet at Freeport has been scheduled for July 14. Three hundred commercial fishing vessels are expected to participate, and the blessing will be performed by Port Chaplain T. J. Prendergast.

The celebration planned will include a King of the Fleet, to be selected on the basis of highest shrimp production during the 1955 season. There will be a parade of decorated fishing boats in Freeport Harbor, and a fish fry and shrimp boil for the crowd, expected to total about 2000. Awards will be made for the best decorated boat in the parade.

Louisiana Combines Seafood And Oyster Divisions

Ernest S. Clements, director of the Wild Life and Fisheries Department, announced recently that the Commercial Seafood Division which he created in 1952 has been merged with the Oyster and Water Bottoms Division, thus displacing Robert L. Eddy, who was head of the Seafood Division.

The merger of the two divisions, as of June 15, was made as an economy move. James N. McConnell, chief of the Oyster and Water Bottoms Division, will be in charge of the merged divisions.

Bill Would Allow Bait Trawling in Two Lakes

A bill introduced in the legislature by Rep. Jesse McLain of St. Tammany would permit trawling for live bait in closed portions of Lake Catherine and Lake Pontchartrain. These lakes and their passes now are restricted to fishing with cast nets, scoop nets, and drop nets for taking of fish, shrimp and crabs. Hand lines, pole lines and rod and reel equipment also is permitted.

McLain said his bill is designed solely to permit trawling for live shrimp for bait. Although the bill, as introduced, provides for no limits, McLain said he planned a provision to limit the take to five pounds of shrimp per person. Persons trawling under provisions of the measure would be required to obtain permits from the Dept. of Wild Life and Fisheries.

Shrimp Packing Light

The 1956 Gulf of Mexico shrimp pack got off to a slow start, with little canning recorded before the second week in May. Production during May was almost completely concentrated in Louisiana. It was limited primarily to small shrimp. The unusual weather which has been experienced in the area has not helped, the month of May being one of the coolest on record.

Production during April and May was at about the same pace as during the comparable period of 1955, but considerably behind as compared with 1953 and 1954. Strong demand for raw material, brought about by the general shortage of shrimp, caused prices to rise to a high level. Canneries have operated almost entirely with small shrimp. The limited quantities of larger shrimp which are being landed are being siphoned off by local eating establishments at fantastic prices.

Catches Large Catfish

Lee Cambor, commercial fisherman, caught a 62-pound yellow catfish recently on a trot line in the Atchafalaya River near the Morgan City railroad bridge.



BUILT IN 1884, the 45' oyster boat "New Atlas" of Empire, La., is skippered by Capt. Luke Jurisich. She has capacity for 35,000 lbs. of oysters, and is powered with 30 hp. Fairbanks-Morse Diesel with 2:1 Joes reduction gear and 28 x 18 Columbian propeller. The vessel is finished with Pittsburgh paint.

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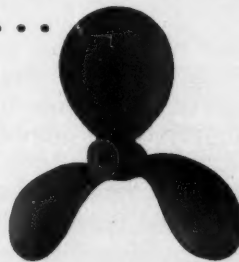
Pistol weighs only 15 ounces, cast aluminum. Grip is walnut-colored plastic. Ammunition in anodized aluminum cases available in meteor or parachute type. Both furnished in red, green, yellow and white.

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- FLARE PISTOLS
- COMPLETE KITS OF PISTOLS AND SIGNALS

EXPERT RECONDITIONING ON PROPELLERS OF ALL SIZES . . .



PRECISION EQUIPMENT and expert workmen insure an accurate repair job. We guarantee our work. Estimates gladly furnished. Send your damaged propeller to us for free inspection and report.

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Write for particulars about the various International Bottom Paints that prevent fouling of both wood and metal bottoms.

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WORLD'S LARGEST MARINE PAINT MAKERS

Rhode Island Gets First Swordfish of Season

The first Rhode Island swordfish of the season were landed on June 17 at Point Judith by the dragger *Joyce Ann*, Capt. Jack Westcott. They harpooned two about 80 miles out of port, one weighing 195 lbs. and the other 165 lbs. The dragger also landed 18,000 lbs. of butterfish and an assortment of other fish.

The first boat in with swords traditionally gets \$1 a pound, and the wholesale price is fixed later. Edward Archambault of Wickford Shellfish got the first sword caught, the 195-pounder. The other went to Champlin's Market.

Quahaug Transplanting Under Way

The State Department of Agriculture and Conservation, with the help of its Shellfish Advisory Committee, has selected dumping areas for between 40,000 and 50,000 bushels of quahaugs it hopes to transplant from polluted to clean waters.

The Department's new dredge boat *Stormy Weather II* started work last month digging up quahaugs in the waters of the Providence River and replanting them in Narragansett Bay areas. The first transplants were to be put into a 200 to 300-acre area off Barrington Beach. Water depth there ranges from 12 to 16 ft., and the area can be worked by either bullrakers or tongs. About 25,000 bushels will be put there.

Another 5,000 to 10,000 bushels will be transplanted in water 6 to 20 feet in depth in Potter Cove off the east shore of Prudence Island. About 1,000 bushels for hand rakers also will be put into Spectacle Cove to the north of Stone Bridge in Tiverton.

Tentatively, the Department has decided to put about 10,000 bushels for dredgers in deep waters off Arnold's Point in Portsmouth.

Give up Surf Clam Dredging

The four-boat surf clam fleet temporarily abandoned dredging along Rhode Island shores last month and went back into more lucrative branches of the fishing industry. The dredgers started working this Spring under new legislation which defined for the first time coastal waters where the clams could be legally dredged. In May the four boats landed a total of 2,158 bushels of clams.

Pipelines May Be Future Fishing Gear

(Continued from page 13)

One might think that not a very large amount of fish would be caught in this manner. This is true only for any given moment. Thus, for a very low estimate, let us suppose that only 10 fish, weighing but one pound each, were captured per second. That would give us the respectable amount of 432 tons of fish for a 24-hour day.

Even during a lull, the fish processing plant owner need never worry, for there always would be other treasures in the sea water. One of these is vegetable plankton, without which fish would starve. Even the whale's food supply is nearly all plankton. Recent researches indicate that vegetable plankton is an excellent food for land animals and even humans. Plankton is microscopic and till recently it has been difficult to separate it from sea water. New processes, however, soon will make it profitable to harvest plankton.

After the extraction of fish and plankton the processing plant need not return the sea water to the ocean immediately, for sea water contains valuable metals and minerals. One of these metals is magnesium. Dow Chemical Co., for a number of years, has profitably extracted this important metal from sea water.

Maryland Expects Gain In Crab Production

Signs were in evidence late last month of an increase in soft shell and hard crab production, with most of the crabs coming from local waters and being caught by local crabbers. A large number of small crabs, which will be of marketable size by the middle or last of this month, were reported. However, crabs generally have been scarce this Spring.

Last year crabs were scarce the first part of the season, but about the middle of July crabbers began to catch great quantities of them, and from that time until about the first of April more crabs were handled than in any previous comparable time. Crab fishermen hope the same will be true this season.

Oppose Oyster Leases

Thirty-six oyster tongs have petitioned the Dorchester County Circuit Court for a declaration as to the legality of the proposed leasing of oyster bottoms in the Little Choptank River, in upper Fishing Bay and in Nanticoke River. The petitioners, all members of the Dorchester Watermen's Association, claim the bottoms are natural oyster beds and should be left open to the tongs.

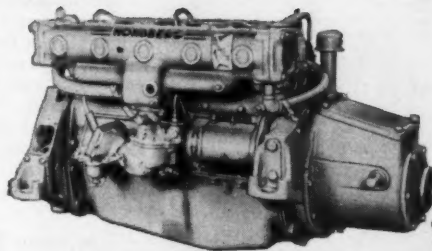
In papers filed before Chief Judge W. Laird Henry, Jr., the tongs state that the Department of Tidewater Fisheries is entertaining applications for leases from twelve individuals, most of them packers or dredgers in the Dorchester County area. Judge Henry has given the applicants until July 2 to present answers to the tongs' claims that the use of natural bars should not be denied the tongs under provisions of leasing.

Dehydrating Oysters, Crabs

With the cooperation of the Army Quartermaster Corps, Charles Bridgell, president of the Carvel Hall Cutlery Co., Crisfield, has developed and is using the Fro-Vac 99 dehydrating process for seafood. By removing the water from shellfish while they are solidly frozen, Fro-Vac 99 eliminates the possibility of cellular breakdown and damage to the fibers. The result is a dried product, fabulously light in weight, which can be kept on a pantry shelf in its container for as long as two years. To restore it, all the housewife need do is add the required amount of water.

Under the name of Carvel Hall 99 Brand, four dehydrated products will be in National distribution this Summer. They are: Oyster Puff Mix, Crab Cakes, Crab Imperial and Oyster Bisque, all famed Maryland dishes.

Presenting the new BLUEFIN "105"



...latest addition to the
high performance line of

NORDBERG GASOLINE MARINE ENGINES

• Here's the newest, high power—low cost member of the well-known Nordberg Marine Engine line . . . the *BLUEFIN* "105".

Turning out a potent 105 horsepower, this new Nordberg model offers the ultimate in a compact, "economy package" . . . giving you more power in less space . . . with the tested and proved design and performance features that boat builders and fishermen have come to expect from Nordberg engines.

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G-456-F

EQUIPMENT and SUPPLY NEWS

New Lister Air-Cooled Diesel

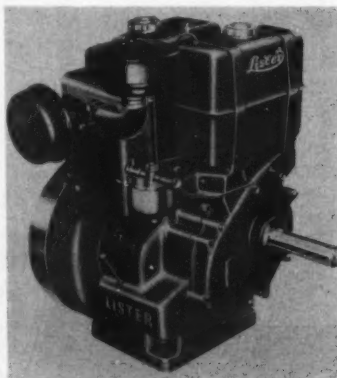
Eight years of intensive development work have produced the Model LD Lister air-cooled 3½ hp. Diesel engine, which is now being distributed Nationally by Lister-Blackstone, Inc., 42-32—21st Street, Long Island City 1, New York.

The Model LD is a 4-cycle full Diesel engine with an up-to-date pintle type injector nozzle, and the combustion chamber is located in the crown of the low expansion alloy piston. This combination results in low fuel consumption and excellent cold starting.

When looking at the flywheel the rotation is clockwise which is standard. The half speed shaft rotates clockwise when looking at the fuel tank end. The engine has precision type main and connecting rod bearings for ease of maintenance and replacement. The camshaft is carried in three bearings lubricated by splash. There is gravity feed from 1¼-gallon tank through a filter to a totally enclosed Bosch pump and injector.

The centrifugal governor is mounted on the crankshaft and coupled direct to the fuel pump. When the engine is operating at speeds not less than 1500 rpm., the governor maintains the settled variation of revolutions within 3%.

The Lister LD Diesel will deliver 5 hp. for intermittent duty, 3½ hp. for continuous 12-hour duty, with 10% overload for one hour. The engine is available with marine type generator and as a complete auxiliary unit, with pump, compressor and generator. It has been approved by leading insurance companies for under deck service.

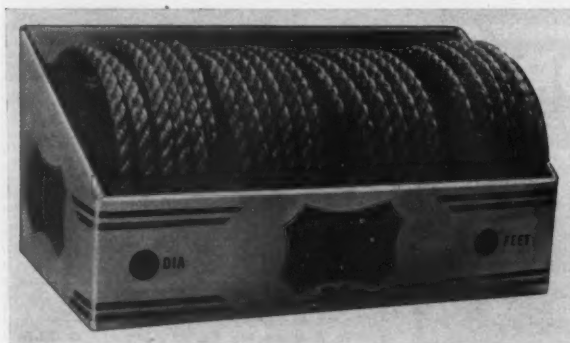


New Lister 3½ hp. air-cooled Diesel.

New Bedford Rope Display Units

Counter coils of New Bedford manila rope on handy reels are now being packed in ready-to-use display units. The purpose of this is to sell rope in reel units—or in multiples of reel units for longer continuous lengths.

Each display holds seven 100 ft. coils of ¼" rope, or six 50 ft. coils of ¾" rope, or four 50 ft. coils of ½" rope. All reels in each display are connected so that long, continuous lengths of rope can be sold. The reels are compact and snarl-free.



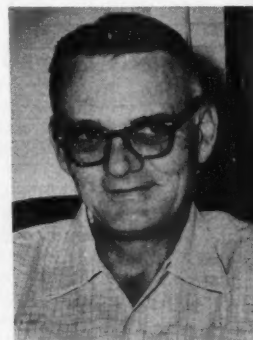
New rope display unit being used by New Bedford Cordage Co.

New Bedford Cordage Co. also has a new multi-use rope dispenser which is designed for easy retail rope handling and includes a measuring and cutting device that allows the salesman to cut the exact lengths desired and sell directly from the floor. The dispenser is of sturdy, all-metal construction that stands on less than 2 sq. ft. of floor space. It holds up to 400 lbs. of rope—200 lbs. in cartons and 200 lbs. on reels—and enables the retailer to stock a complete range of popular sizes of rope in one compact unit. The dispenser is available with or without the reel arms.

Cummins Booklet Explains Diesel Operation

A 24-page booklet entitled "Answers to Questions About Diesels" has been released by Cummins Engine Co., Inc., Columbus, Indiana. Fully illustrated, the booklet is designed to acquaint the reader with the basic principles of Diesel operation. Each question is asked and answered in simple, non-technical terms, and the principal differences between Diesel and gasoline engines are explained.

Alvin T. Roberts, Jr., who has been named Director of Operations of the Morehead City (N.C.) Shipbuilding Corp. A native of Macon, Georgia, and a registered engineer, Roberts was with the Lummus Cotton Gin Co., Columbus, Georgia, for 20 years. In 1942 he joined the Harris Foundry & Machine Co., Cordele, Georgia. He came to the Morehead City organization in April, 1956, on loan from the Harris Company.



Boston Fish Hose for Pumping out Nets

Boston Woven Hose & Rubber Co. of Cambridge, Mass., is supplying fish hose in diameters ranging from 6 to 12 inches. Now a trawler may hold nets submerged in 75 feet of water, lower the fish hose and pump the fish into the hold. The hose, specially constructed for greater flexibility and durability, resists deteriorating effects of fish oils and briny waters.

Boston fish hose is claimed to speed loading and unloading, (the hose also unloads the catch at the pier), permitting more frequent trips per boat. Costly and time-consuming repairs to fish nets are reduced with the new method, as hauling of nets over the side is eliminated.

It is claimed that Boston fish hose will handle fish up to three feet long, with no damage to the fish. Recovery of fish scales, an important by-product, is perfected with the hose system.

A variation of the fish pumping system is used in the coastal waters of Maine, where the Boston fish hose is dragged across over-crowded clam beds, with the seedlings being pumped into boats and later spread in barren areas, to increase the clam yield.

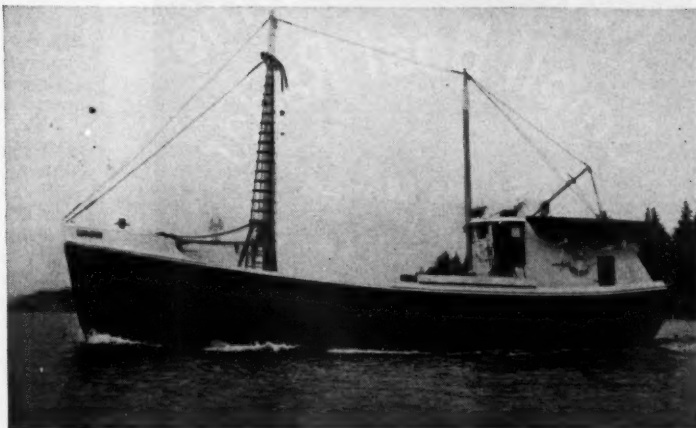
New Shell Oil Reduces Cylinder Wear

A new emulsion-type lubricant, developed by Shell Oil Company engineers, is said to reduce the wear of cylinder liners of large two-stroke marine Diesel engines by as much as 70 percent. Extensive laboratory and field tests

TOBIN BRONZE SHAFTING GIVES SCALLOP DRAGGER "SIPPICAN" DEPENDABLE POWER TRANSMISSION

The 76-foot "Sippican," built by Harvey Gamage, South Bristol, Me., designed by Dwight S. Simpson & Associates, Boston, has an unusual hull form for a fisherman. She has a transom stern and her middle-body is considerably fuller than usual, with less deadrise and a higher freeboard than most boats of her size. These features help make her an easier and faster boat, especially in rough water. On her first run, she made 10.6 knots with a 15-mile head wind.

Power from the "Sippican's" D375 Caterpillar Diesel is transmitted dependably by a 4½" Tobin Bronze Shaft to a 54 x 41 Hyde propeller. Tobin Bronze propeller shafting resists sea-water corrosion. It is strong and tough... yet "gives" under sudden jars to lessen the chance of damage to bearings and housings. This shafting is turned for roundness and specially straightened. That reduces vibration.



To be sure it's Tobin Bronze*, look for this propeller insignie. And for higher speed, heavier duty work, specify Tempaloy* shafting. For tough, corrosion-resistant fastenings and fittings, specify Everdur* Copper-Silicon Alloys. The American Brass Company, Waterbury 20, Conn. In Canada: Anaconda American Brass Ltd., New Toronto, Ont.
*Reg. U.S. Pat. Off. 56118

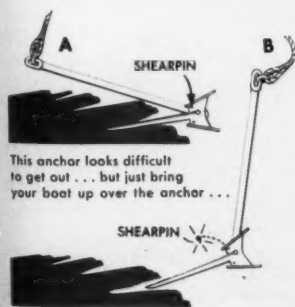
ANACONDA® MARINE BRASS AND BRONZE

show that through the use of a water phase in the lubricant, Alexia Oil A permits the introduction of much larger quantities of alkaline additives than are possible with even the best of heavy-duty engine oils. Thus, the new lubricant remains active for longer periods of time and neutralizes more of the harmful combustion acids.

Alexia Oil A has made it possible for several deep-sea fleets to burn residual oil. Although considerably cheaper than the normal grades of fuel oil, residual oil has not been used much in the past because of its high sulfur content. It forms a much greater percentage of combustion acids than do the regular fuel oils, and most lubricants are not capable of neutralizing these acids. However, with the new emulsion-type lubricant, the corrosive wear of combustion products can be practically stopped.

Alexia Oil A not only prevents liner wear, but also keeps combustion-zone engine parts much cleaner. In some cases it has been noted that the oil actually has removed deposits previously left by straight mineral oils.

Danforth Has New 8-Pound Shearpin Anchor



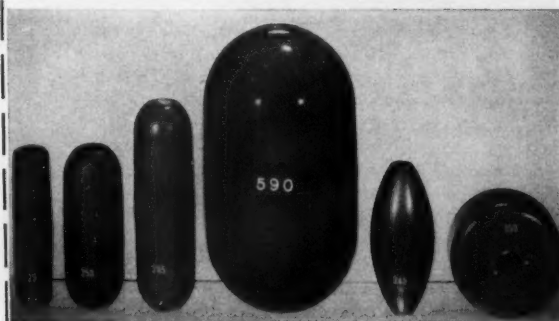
This anchor looks difficult to get out... but just bring your boat up over the anchor...

pull vertically... the shearpin breaks, the shank swings back, and out it comes, backward!

An 8-pound Danforth anchor with the shearpin quick-release feature has been introduced and is now in dealer stocks. Danforth Shearpin anchors look and hold like the Danforth Standard anchor, but are designed for use where loss of anchors and line is common.

In operation, the 8-pound Danforth Shearpin anchor holds about 1,000 pounds against a straight pull in average holding ground. If the anchor is

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Every One Unconditionally Guaranteed

Specifically Designed For Fishing Areas In Which They Are To Be Used—Deep Or Shallow Water

- ★ Maximum Buoyancy
- ★ Will Not Support Marine Life
- ★ Will Not Absorb Water

ALL GILL-NET SIZES FROM 1½" x 5" to 5" x 9"
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New Radiomarine Small Boat Radar

- Saves Money
- Saves Space
- Saves Power



Especially designed for vessels on which space and power are limited, Radiomarine's new CR-105-A Radar offers you the EXTRA features that give you MAXIMUM PERFORMANCE—MAXIMUM CONVENIENCE—MINIMUM MAINTENANCE. Only two basic units—indicator and antenna. Indicator is in deck mounted binnacle. . . keeps picture tube high for best viewing . . . requires less than two square feet of deck space. Antenna is lightweight . . . only 105 pounds. Instant selection of 1-2-4-12-32 mile ranges helps you navigate through foul weather and traffic hazards to cut your trip-time, boost your profits. You'll read the clear, bright pictures on its 10-inch scope easier . . . service it quicker with the easy-access chassis. And here's another saving . . . the Radiomarine CR-105-A requires only 600 watts from ship's battery or other D.C. power supply. Find out more about the new Radiomarine CR-105-A . . . it can mean greater profits for you right now.



write for free information now!

RADIOMARINE CORPORATION of AMERICA

A SERVICE OF RADIO CORPORATION OF AMERICA
75 VARICK STREET, NEW YORK 13, N.Y.

snagged, a 95-pound pull from directly over the anchor will break the shearpin, allowing the flukes to be pulled out backwards.

A common eightpenny nail used as a shearpin will break with a direct vertical pull of about 95 pounds. The boat owner can use a larger or smaller nail if desired, thus changing the amount of pull required to release the snagged anchor.

Danforth also makes a 4-pound Shearpin anchor, which breaks out with a 30-pound vertical pull, using a 10-ga. copper nail.

Representing Manufacturer of Falcon Horns

Appointment of Richard Larrabee of Northport, Long Island, as northeastern manufacturer's representative for Falcon marine signaling devices has been announced by the Falcon Alarm Co., Inc., Summit, N. J. Mr. Larrabee's territory will include New York, New Jersey, Eastern Pennsylvania and the New England States.

Falcon produces light-weight and self-powered fog and "Big Bertha" horns for both sail and power boat operators. The marine signal devices meet U. S. Coast Guard requirements and "Rules of the Road".

Powered by one-pound disposable cans of harmless Freon gas, the fog and other marine horns will produce approximately 300 two-second blasts of 110 to 115-decibel intensity from each can of Falcon's "Packaged Power". The Falcon fog horn has an audible range of a mile, while the larger "Big Bertha" can be heard up to two miles away.

Smith Joins Knox Marine Exchange

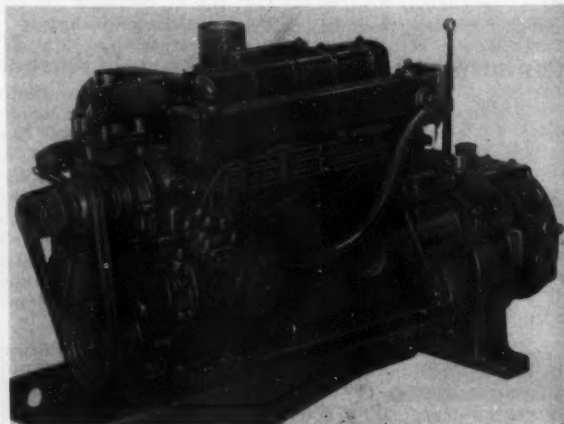
Stephen H. Smith of Chatham, Mass., has joined the Knox Marine Exchange, Inc., Camden, Maine. Recently he has been in Nova Scotia looking over boats with an eye to the possibility of importing cruisers around 35' in length. He also will be interested in importing commercial boats up to 40' as may be required.

Oliver Marine Diesels Are Compact

Built in 4 and 6 cylinder series, Oliver marine Diesels are compact in size and cover the power range from 37 to 75 hp. They are 4-cycle, operate at 2000 rpm., and have modern short-stroke design which reduces piston travel and wear. Fully marine, Oliver Diesels have large water circulating passages completely surrounding each cylinder, assuring cool, efficient operation.

Oliver marine engines start and run on Diesel fuel, and their 4-cycle full Diesel design gives them extremely economical operation. Because of large-volume production, these Diesels are low-priced, being comparable in cost to some gasoline engines of equivalent horsepower.

New specification literature on the Oliver marine Diesels is now being released by The Oliver Corp., Industrial Div., 400 West Madison St., Chicago 6, Ill. Ask for Bulletin AS-183.



Oliver marine Diesel.



Algot A. Green, left, who has been named sales engineer at the New Orleans branch office of Enterprise Engine & Machinery Co.; and J. L. (Jack) Roberts, sales engineer, who has been assigned to Enterprise's Los Angeles branch office.

Enterprise Engine Sales Appointments

Enterprise Engine & Machinery Co. has made several changes in its sales staff recently. J. L. (Jack) Roberts, sales engineer, has been assigned to the Los Angeles branch office, where he will join Roy Hogaboom, branch manager, in providing special service to marine Diesel users. The Enterprise office in Southern California is located at 10777 Van Owen St., Burbank, Calif.

With Enterprise continuously since 1946, Roberts has been associated with the Company's New Orleans offices for the past four years. Prior to that he served in the Enterprise design engineering department.

Algot A. Green has been named sales engineer at the New Orleans branch office, and will work under the direction of Paul Wabnig, branch manager. Enterprise offices in New Orleans are located at 441 Baronne St.

Serving both marine and stationary Diesel engine requirements of the territory, Green will work throughout three States, Louisiana, Alabama, and Mississippi. He has been connected with the Diesel industry for 22 years, and most recently has served as a field engineer with the Enterprise New Orleans office.

North Carolina Shrimpers Expect Improved Catches

The spotted shrimp, which usually are taken in trawls from the middle of May through June, did not show up this season. However, shrimpers reported indications of good Summer and Fall shrimp runs.

Recently Harker's Island fishermen reported an increase in catches of channel head shrimp. Such catches normally indicate to trawlers that an abundance of shrimp are on their way inside.

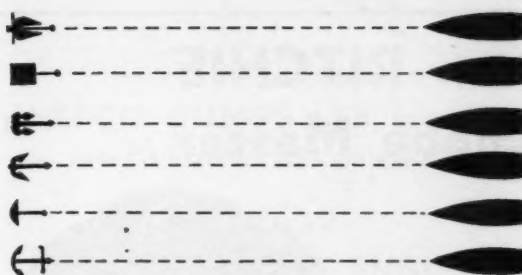
Reports also were received that millions of baby shrimp had showed up in Newport River. This is a good indication there will be plenty of adult shrimp available this Fall, providing hurricanes don't spoil the fishing.

Bluefish, as well as mackerel, are normally plentiful at this season of the year, but they also have failed to show up in commercial quantities.

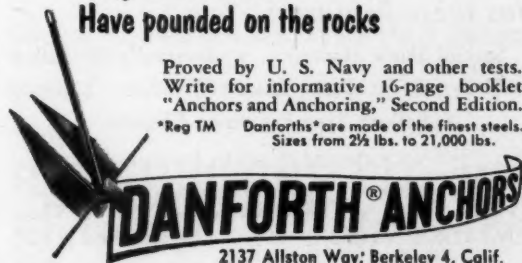
Dr. A. F. Chestnut, director of the Institute of Fisheries Research, said that the cold weather may be responsible for the lack of a Spring shrimp run.

To Get Funds for Waterway Projects

Funds will be allocated during the fiscal year beginning July 1 for dredging the channel around Harkers Island and constructing a harbor at Marshallberg. This information was contained in a telegram sent to Fisheries Commissioner C. G. Holland by Congressman Graham A. Barden.



Anchor a number of boats
Each with a different anchor
Start increasing wind and seas
The boat with the Danforth*
Will still be there
Long after the others
Have pounded on the rocks



Proved by U. S. Navy and other tests.
Write for informative 16-page booklet
"Anchors and Anchoring," Second Edition.
Reg TM Danforths are made of the finest steels.
Sizes from 2½ lbs. to 21,000 lbs.

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3½ H.P.
DIESEL
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and completely air-cooled, in any climate.

A full line of Lister-Blackstone Diesels from 3½ to 600 horsepower for marine use, generating, refrigeration, road construction, irrigation — wherever a diesel can be used, you'll get more power for less money with a LISTER.

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in special deck
mount binnacle
Model No. C-453



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- Heavy Gauge Brass Case • Indirect Lighting
- Bellows-Type Expansion Chamber

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The fishermen and other commercial boat owners who have switched to the MICHIGAN STAR now number many hundreds, and every last one of them, to the best of our knowledge, is agreed that it is the finest wheel they have ever owned . . . smooth almost beyond belief; faster at normal cruising rpm; more economical of fuel and providing greater towing power. Why not enjoy all this plus the much longer lasting qualities of its super-strong, corrosion resistant MICHALLOY K alloy? See your Michigan dealer now! You'll find it pays.



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"STAR"**
20" thru 60"
Diameters

MICHIGAN WHEEL COMPANY
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Alabama Shrimp Catches Show Improvement

Shrimping in Mobile Bay and Mississippi Sound picked up in early June, and produced fairly good catches. Lee Callaway of Gulf Shores, who operates a fleet of shrimp boats in the Gulf, said that shrimp are being taken closer to shore now.

Alabama Conservation Department officials reported recently that a number of out-of-State boats have been showing up at local packing houses with shrimp. Capt. Paul Wright of the *Gulf Rebel* from Bayou La Batre reported cruising through a fleet of about 35 deep-water shrimp boats 10 miles south of Petit Bois Island. He saw boats from South Carolina and Florida.

Over 200 shrimp boats were idle during the three-month period preceding June because of a shrimp shortage. Some of the coastal fishermen began gathering oysters, but when the State closed the oyster beds, the fishermen sought jobs elsewhere. At least half of the shrimpers from the Bayou La Batre area took jobs with offshore oil drilling companies, working off the coast of Mississippi and Louisiana.

Crab Meat Production Good

Crab meat production on the Alabama Gulf Coast is fairly good, according to reports from the Star Fish & Oyster Co. of Mobile. However, fish production for the Summer months is slowing up, particularly in red snapper and grouper. Best fishing is off the Texas coast and at the mouth of the Mississippi River.

The *Lisa G.*, a new vessel owned by Star Fish & Oyster Co., is doing very well. On her first 4 voyages she returned with not less than 20,000 pounds per trip.

Shell Dredging on Oyster Reef Postponed

The Mobile Bay Sea Food Assoc. in early June went on record as opposing the commercial shell dredging of White House oyster reef in southern Mobile Bay, and as a result, the State Dept. of Conservation decided to postpone shell dredging in the vicinity of the reef. According to the Association, dredging of the reef would mean the destruction of the most productive oyster bed in the area.

Daylight Shrimping to be Allowed

The Alabama Department of Conservation is permitting daylight shrimping in certain areas of Mobile Bay and Mississippi Sound. James Allen, seafood inspector at Bayou La Batre, said commercial shrimping is now allowed day and night in Mobile Bay extending from East Fowl River to Beacon 20 to Mullet Point. Formerly only night shrimping was permitted. Commercial shrimping is still prohibited north of the above described line.

The new rule allows day and night commercial shrimping in Mississippi Sound south and east of a line running from Grand Batture to South End Beacon to Dauphin Island.

To Deepen Mobile Harbor Channel

The House Appropriations Committee in Washington recently approved a \$2,543,000 construction allocation for the Mobile harbor channel widening and deepening project.

Also appropriated were funds for completion of a water project on Fly Creek at Fairhope, Ala. This includes deepening of the creek and construction of breakwaters for protection of commercial fishing boats and pleasure craft.

"Tom and Jean" Gets New Engine

The Star Fish & Oyster Co. of Mobile is installing a new engine in its schooner *Tom and Jean*. The 70 by 19 ft. vessel will have a 110 hp. General Motors Model 4-71 Diesel, with 3:1 reduction gear.

BOAT CATCHES

For Month of June

Hailing fares. Figure after name indicates number of trips.

SEATTLE

Halibut Fleet Fishery

Addington (1)	17,000	McKinley (1)	90,000
Agnes O. (1)	53,000	Mermaid (2)	34,000
Albatross (1)	30,000	Merit (1)	14,000
Alrita (1)	60,000		
Angeles (2)	71,000	Nanna (1)	41,000
Anne (1)	39,000	National (2)	52,000
Arne (1)	35,000	New Era (1)	47,000
Attu (1)	43,000	Nightingale (2)	19,300
		North (1)	50,000
Bergen (2)	52,000	Northern (1)	50,000
Bernice (1)	20,000	Northern Light (1)	50,000
Bernice R. (1)	41,000	Nova (1)	34,000
Betty Jane (1)	5,000		
Borghild (1)	30,000	Oceanus (2)	59,000
		Orbit (1)	20,000
California (1)	28,000		
Celtic (1)	60,000	Pacific (1)	70,000
Chelsea (1)	60,000	Patricia Joan (1)	60,500
Christian S. (2)	60,000	Pierce (2)	16,000
Claudia H. (1)	52,000	Pioneer (1)	54,000
Crest (1)	36,000		
		Recovery (1)	35,000
Dean (1)	27,000	Republic (1)	58,000
DeLuxe (1)	16,500	Resolute (1)	37,000
Dixie Maid (1)	17,000		
Dolphin (1)	35,000	St. John II (1)	43,000
		Salute (1)	50,000
Eclipse (1)	55,000	Sanak (1)	37,500
Ethel S. (2)	90,000	Sandra L. (1)	30,000
Eureka (2)	25,000	Sea Bird (1)	20,000
		Seagull (2)	40,000
Faith II (1)	31,000	Sea Ranger (1)	86,000
Flint (1)	46,000	Seattle (1)	31,000
Flying Tiger (1)	50,000	Seymour (1)	58,000
Forward (2)	39,000	Shirley (1)	40,000
Freja (1)	20,000	Shirley J. (1)	37,000
		Signe (1)	32,000
Ideal (1)	15,000	Sonja (2)	87,000
Ikaros II (1)	18,000	Soupin (1)	59,000
Ilene (1)	54,000	Summit (2)	57,000
Inez M. (2)	74,000	Suzanne (1)	15,000
Ivanhoe (2)	95,000	Swift II (1)	5,500
		Sylvia (2)	83,000
Jane (1)	18,000		
J.B. (1)	30,000	Thor (1)	53,000
		Traveler (1)	28,150
Kingfisher (1)	30,000		
Kodiak (1)	43,000	Unimak (1)	29,000
		Urania (1)	27,000
Lady Olga (1)	30,000		
Lancing (2)	30,000	Velvet (1)	24,000
Lane (2)	29,000	Vigorous (1)	50,000
Lloyd (1)	46,000		
Lualda (1)	40,000	Wesley (1)	7,700
Lucky Star (1)	20,000	Wireless (1)	13,872
Maddock (1)	17,000	Yakutat (1)	20,000
Marconia (1)	93,000	Zenith (1)	40,000
Marlee Ann (2)	56,000		
Masonic (1)	50,000		

PORTLAND (Me.)

Alice M. Doughty II (3)	124,000	Mascot (9)	83,700
Alton A. (1)	17,000	Medan (2)	630,000
Arabo (1)	130,000	Minnie (2)	495,000
Blanch R. III (10)	166,700	Nora D. Sawyer (7)	44,700
Cathy & Aldie (12)	84,600	Olive Mae (5)	171,000
Challenge (13)	167,300	Quincy (1)	8,700
Challenger (12)	213,100	Rebecca (1)	117,200
Courier (1)	215,000	Rebecca II (11)	218,000
Crescent (8)	99,500	Resolute (3)	210,000
Dorchester (2)	374,000	St. George (1)	97,100
Dorothy & Ethel II (5)	71,600	St. Joseph IV (7)	11,700
Elin B. (2)	100,000	St. Mary (7)	48,100
Ethelina (3)	221,000	Shy-Ann II (2)	8,200
Golden Dawn (1)	35,000	Silver Bay (2)	350,000
Gretchen & Dale (1)	4,000	Theresa R. (2)	305,000
Gulf Stream (2)	440,000	Vandal (3)	275,000
Kennebec (1)	63,000	Vida E. II (12)	246,300
Lawson (1)	78,000	Virginia Ann (1)	3,600
Little Growler (1)	7,100	Voyager (2)	108,000
Mabel & Susan (1)	30,000	Wawenock (2)	508,000
Marie H. (5)	34,100	Winthrop (2)	355,000
Mary & Helen (14)	185,900		
Mary H. (2)	17,200		

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Distributor of

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Overhead Valve Palmer Engines

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and pistons for Buda 6DCMR 1879

Cylinder Heads with valves for Superior
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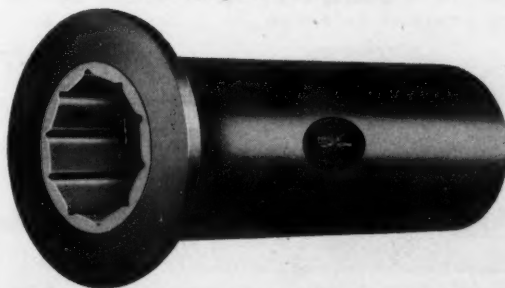
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Soft rubber, water lubricated, Cutless bearings
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Resist heat, oil, and wear. Quiet and protect shafts
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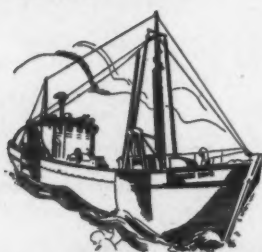
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AKRON 8, OHIO

Engineers and National Distributors

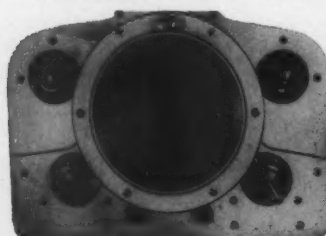
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LAVOIE MARINE RADAR

Sets New Records for
Performance...
under All Conditions

The lightweight super-sensitive BAT antenna, revolving atop the wheelhouse, is seen on ever-increasing numbers of fishing craft out of Gloucester, New Bedford, down the coast and into the Gulf as well as Pacific ports. If you haven't read the articles in fishing and marine papers on recent BAT installations, we will gladly send you reprints on request. Also available is a reprint of an article telling how the BAT is guiding Navy Seabee weasels over the icy wastes of Antarctica.



LIGHTEST
in weight
LOWEST
in price
CLOSEST
in range

Yes, the BAT is closest in range because it gives you accurate, dependable sailing information right in to 30 yards for close work in crowded harbors... yet reaches out 16 miles to give you equally dependable information at sea... under all weather conditions.

Illustrated brochure and specifications and dealer names on request.

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NEW YORK

Scallop Landings (Lbs.)

Barbara & Gail (1)	10,500	Florence B. (2)	16,400
Beatrice & Ida (1)	9,600	Miriam A. (2)	17,400
Carol-Jack (3)	27,400	Norseman (2)	17,000
Catharine C. (2)	21,700	Quest (1)	4,600
Clipper (1)	9,800	Rosalie F. (1)	10,800
Enterprise (2)	20,800	S. No. 31 (3)	22,900
Felicia (1)	9,900		

GLOUCESTER (Mass.)

Admiral (3)	258,000	Lady of the Rosary (3)	119,500
Alden (1)	1,500	Linda B. (4)	18,000
American Eagle (5)	381,500	Little Flower (4)	90,500
Anna Guarino (14)	57,000	Little Joe (5)	27,500
Annie (8)	21,500	Little Sam (1)	30,000
Annie & Josie (5)	13,000	Malolo (3)	240,000
Anthony & Josephine (10)	51,000	Margaret Marie (7)	108,500
Arthur & Josephine (1)	25,000	Margie L. (3)	8,000
Atlantic (3)	222,000	Maris Stella (2)	365,000
Baby Rose (1)	110,000	Mary Ann (6)	455,500
Bobby & Jack (1)	100,000	Mary E. (6)	6,500
Bonaventure (3)	504,000	Mary Jane (2)	400,000
Cape Cod (4)	17,000	Mary Rose (2)	325,000
Carlansui (3)	10,500	Morning Star (4)	234,000
Carlo & Vince (6)	362,500	Mother Ann (2)	495,000
Catherine B. (2)	208,000	Nancy & Maria (6)	70,500
Chanco (1)	125,000	Ocean Clipper (2)	110,000
Cigar Joe (3)	222,000	Ocean Life (2)	820,000
Clipper (1)	160,000	Ocean Spray (1)	60,000
Columbia (1)	180,000	Our Lady of Fatima (1)	220,000
Curlew (2)	345,000	Pioneer (10)	28,000
Dawn (11)	40,000	P. K. Hunt (1)	107,000
Dolphin (2)	255,000	Powhatan (1)	57,000
Doris F. Amero (3)	242,000	Priscilla (2)	5,000
Eagle (6)	1,061,000	Prosperity (7)	41,000
Eddie & Lulu M. (3)	8,500	Rose & Lucy (4)	363,000
Edith L. Boudreau (2)	190,000	Rosemarie (1)	1,000
Eva M. Martin (3)	2,500	Sacred Heart (5)	14,000
Eva II (12)	34,500	St. Anna Maria (8)	114,000
Evelina M. Goulart (1)	98,500	St. Anthony (6)	910,500
Evelyn C. Brown (2)	610,000	St. John (10)	26,500
Falcon (13)	52,500	St. Joseph (2)	104,000
Figueira Da Foz (2)	235,000	St. Mary (7)	221,000
Florence & Lee (2)	440,000	St. Nicholas (2)	380,000
Flow (2)	580,000	St. Peter (5)	398,500
Frances R. (4)	88,500	St. Providenza (11)	46,000
Frankie & Jeanne (6)	10,000	St. Stephen (6)	14,500
Gertrude E. (11)	12,000	St. Terese (4)	343,500
Giacoma (10)	31,000	St. Victoria (1)	50,000
Gladys L. (1)	2,500	Salvatore & Grace (9)	776,000
Golden Dawn (3)	79,000	Sammy C. (1)	1,000
Golden Eagle (1)	140,000	Sea Hawk (1)	150,000
Helen M. (6)	382,500	Sea Queen (1)	85,000
Holy Family (2)	340,000	Sebastiana C. (8)	689,500
Holy Name (5)	350,500	Sunlight (3)	265,000
Immaculate Concept'n (7)	489,500	Texas (1)	88,000
Irene Y. (1)	150,000	Theresa M. Boudreau (2)	435,000
Irma Virginia (4)	15,500	Tipsy Parson (12)	32,000
Jackson & Arthur (12)	42,500	Tuna D. (1)	100,000
Jennie & Lucia (3)	205,000	Vagabond (2)	169,000
Jorgina & Silveira (1)	70,000	Vandal (1)	90,000
Joseph & Lucia (2)	330,000	Victoria (6)	5,500
Joseph S. Mattos (2)	420,000	Villanova (3)	534,000
Josephine P. II (1)	2,000	Vincie N. (5)	497,000
Josie II (6)	18,000	Virginia Ann (3)	24,500
Judith Lee Rose (2)	680,000	We Three (1)	8,000
Kingfisher (1)	225,000	White Owl (10)	25,500
Lady of Good Voyage (1)	90,000	Whitestone (1)	67,000
		Wild Duck (2)	330,000

Scallop Landings (Lbs.)

Brother Joe (1)	4,000	Rita B. (1)	11,000
Cap'n Bill (1)	4,500	Skilligolee (1)	8,000
Francis L. MacPherson (2)	18,500	Stephen R. (1)	10,000

STONINGTON (Conn.)

Averio (16)	21,000	Lt. Thos. Minor (15)	25,200
Betty Anne (15)	31,200	Lisboa (1)	200
Carolyn & Gary (12)	22,500	Little Chief (14)	30,000
Connie M. (14)	28,100	Marise (10)	22,100
Fairweather (17)	65,900	Mary H. (11)	14,800
Five Sisters (7)	15,800	Old Mystic (14)	46,100
Irene & Walter (12)	40,900	William B. (12)	29,500
Jane Dore (2)	3,900	William D. (1)	4,700

BOSTON (Mass.)

Acme (2)	35,500	Morning Star (1)	21,400
Addie Mae (1)	5,000	Mother Frances (3)	160,700
Agatha (3)	138,300		
Agatha & Patricia (3)	156,800	Nancy B. (3)	66,500
Alphonso (1)	2,000	Nautilus (2)	141,000
Angie & Florence (3)	73,200	New Star (3)	273,600
Annie & Lucy (3)	35,100	Notre Dame (2)	126,300
Arlington (3)	346,000		
Atlantic (3)	246,800	Ocean Clipper (2)	69,600
		Ocean Wave (3)	144,200
Bay (2)	183,400	Ohio (2)	199,200
Bonnie (3)	277,100	Olympia (3)	123,300
Bonnie Billow (2)	140,300	Olympia LaRosa (2)	105,100
Bonnie Breaker (3)	218,100		
Bonnie Breeze (3)	305,200	Pam Ann (2)	178,700
Brighton (3)	245,600	Patty Jean (2)	196,000
Buzz & Billy (3)	166,400	Phantom (2)	306,000
		Plymouth (2)	160,500
Cambridge (3)	325,000	Princess (1)	11,800
Carmela Maria (4)	53,500		
Catherine B. (4)	17,300	Racer (3)	285,900
Comet (2)	207,200	Red Jacket (3)	479,200
		Roma (1)	12,600
Elizabeth B. (1)	93,700	Rosa B. (1)	101,000
Emily H. Brown (2)	191,700	Rosie (3)	55,400
		Rush (1)	122,200
Flying Cloud (2)	337,800		
Four (2)	187,300	St. Angelo (1)	30,700
		St. Anna (2)	10,600
Geetano S. (2)	158,400	St. Joseph (1)	38,500
Geraldine & Phyllis (2)	165,700	St. Marco (2)	86,200
		St. Rosalie (1)	43,900
Jane B. (3)	221,000	St. Victoria (2)	108,900
J. B. Junior (3)	244,800	Salvatore (5)	1,900
J. B. Junior II (3)	29,400	San Calogero (1)	26,400
Josephine F. (2)	17,200	Sant' Antonio II (3)	31,800
Josephine P. II (4)	169,300	Santa Maria (3)	145,600
		Santa Rita II (5)	63,300
Katie D. (1)	80,000	Savio (1)	7,300
		Star of the Sea (5)	270,400
Lawrence Scola (2)	18,300	Swallow (3)	255,400
Leonard & Nancy (3)	125,900		
Luckmees (1)	110,300	Texas (1)	107,800
		Thomas D. (3)	140,900
Magellan (3)	124,600	Thomas Whalen (3)	230,100
Maine (2)	250,500		
Manuel F. Roderick (2)	142,000	Villanova (2)	93,500
Maria Del Soccora (1)	700		
Maria Giuseppe (2)	1,500	Weymouth (3)	291,200
Mary & Joan (2)	166,100	William J. O'Brien (2)	225,300
M. C. Ballard (3)	205,500	Winchester (3)	337,500
Michael G. (3)	40,600	Wisconsin (2)	237,900

WOODS HOLE (Mass.)

Angenette (5)	5,500	Lillian C. (1)	1,700
Arnold (8)	43,100	Little Lady (5)	9,800
Bernice (4)	32,500	Madeline (3)	11,500
Bluefin (3)	37,400	Madonna Di Trapani (2)	8,900
Cap'n Bill II (1)	24,700	Morning Star (4)	14,400
Carib (1)	1,900	Priscilla V. (5)	93,400
Carl J. (8)	130,300	Roann (2)	12,100
Clifton (2)	4,800	Rose Marie (2)	19,400
Clinton (1)	9,000	Rose Mary (5)	72,600
David & James (2)	3,200	Sea Buddy (3)	7,900
Debenzer (3)	8,400	Seranna (2)	3,800
Elva Beale (1)	1,200	Southern Cross (2)	7,700
Hilda (2)	3,700	Squam (3)	3,400
Janet Elise (7)	55,600	Susie O. Carver (1)	6,100
J. Henry Smith (5)	16,500	Theresa (4)	56,100
Judy Sue (12)	15,200	Three Bells (1)	10,500
Kathy Dick (1)	1,300	Viking (2)	2,200
Keibarsam (3)	32,600	Winfred M. (5)	18,000

Scallop Landings (Lbs.)

Babe Sears (1)	9,500	John G. Murley (1)	10,100
Friendship (2)	8,400	Mary J. Landry (1)	10,100

Swordfish Landings (Lbs.)

Christine & Dan (1)	4,600	Papoose (1)	1,000
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ROCKLAND (Me.)

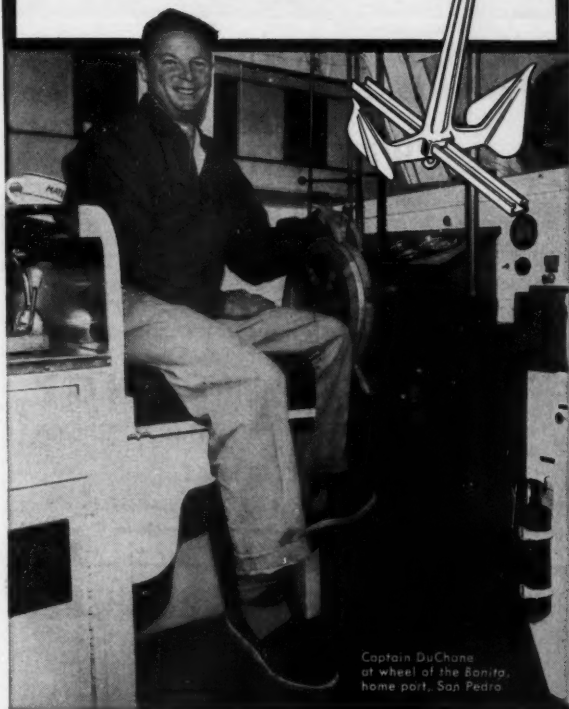
Andarte (3)	152,000	Helen Mae II (3)	131,000
Arabo (1)	97,000	John J. Nable (2)	290,000
Calm (2)	636,000	Lawson (1)	50,000
Crest (3)	870,000	Little Growler (1)	57,000
Dorothy & Betty II (3)	104,000	Mabel Susan (3)	66,500
Drift (3)	752,000	Ocean (2)	600,000
Eliel B. (3)	42,500	Surf (2)	605,000
Flo (4)	203,500	Wave (2)	610,000
Frances-Alice (1)	11,000		

Scallop Landings (Lbs.)

Jeanne D'Arc (2)	21,000	Rhode Island (1)	8,000
Pocahontas (3)	33,000		

"I appreciate the security and easy handling of my Northill Anchor!"

states Captain Don DuChane



Captain DuChane at wheel of the Bonita, home port, San Pedro

You can take it from this experienced sport fishing boat captain: for the skipper who up-anchors often, nothing beats the superior holding power and light weight of the Northill Anchor. That's why it's been the largest selling anchor for boats up to 80 feet for 18 years! 3 to 105 pounds.

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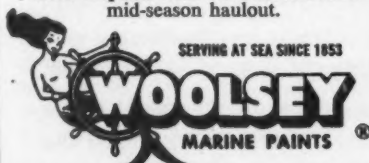
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"Whistle" Rhodes

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STOP EXPENSIVE HAULOUTS!

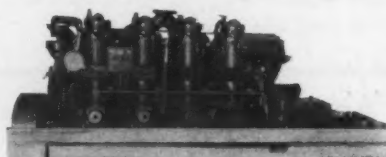
Conventional bottom paints can't give you the longer-lasting fouling resistance of "TRADEWINDS" Anti-Fouling. Bottoms protected with this highly-toxic Woolsey formula *remain clean*...and this remarkably efficient repellent also insures excellent slip and smoothness. Repaint with "TRADEWINDS" and forget that mid-season haulout.



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**UNUSED
DIESEL
ENGINE**

Kahlenberg diesel engine—120 HP—10" bore—10½" stroke—4 cyl.—2 cycle. Direct reversible, with reverse and clutch. Has air starting. Engine is a complete installation consisting of 3-blade propeller, aux. air compressor, Kahlenberg air horn, air tanks, muffler, pilot house control, motor generator set, tools, spares.

THE BOSTON METALS COMPANY
313 E. Baltimore St., Baltimore 2, Md.
CUrtis 7-5050

NEW BEDFORD (Mass.)

Adventurer (4)	65,500	Julia DaCruz (3)	77,100
Annie Louise (3)	30,300	Katie D. (2)	108,000
Annie M. Jackson (4)	107,500	Lorine III (2)	59,200
Austin W. (2)	49,500	Major J. Casey (2)	71,000
Barbara M. (3)	44,900	Marie & Katherine (2)	28,700
Cap'n Bill II (1)	50,300	Mary Tapper (3)	75,300
Carl Henry (3)	72,800	Midway (3)	134,800
Charles E. Beckman (5)	68,600	Molly & Jane (2)	31,300
Christina J. (3)	111,000	Nautilus (1)	46,200
Connie F. (2)	58,000	Pauline H. (3)	247,500
Dauntless (3)	40,500	Phyllis J. (3)	44,200
David & James (2)	8,000	Roann (2)	40,000
Driftwood (2)	9,700	Roberta Ann (2)	68,000
Elizabeth B. (1)	38,200	Rosemarie V. (2)	64,800
Elva & Estelle (4)	61,200	St. Ann (3)	69,300
Elva L. Beal (3)	26,100	St. Rosalie (1)	45,700
Eugene & Rose (3)	78,800	Shannon (4)	93,800
Four (1)	77,500	Solveig J. (3)	164,400
Gannet (2)	96,000	Stanley B. Butler (2)	128,600
Gladys & Mary (3)	128,000	Sunbeam (2)	56,500
Growler (2)	51,100	Susie O. Carver (3)	46,500
Harmony (3)	64,500	Theresa & Jean (3)	163,400
Hope II (2)	84,000	Two Brothers (4)	45,800
Invader (4)	151,600	Venture I (3)	116,600
Ivanhoe (3)	37,900	Victor Johnson (2)	38,900
Jacintha (3)	132,800	Viking (2)	105,700
Jeannie Ann (3)	45,900	Whaler (3)	115,500
Jimmy Boy (1)	15,000		

Scallop Landings (Lbs.)

Agda (2)	11,500	Laura A. (2)	22,000
Aloha (2)	22,000	Lauren Fay (2)	22,000
Alpar (1)	11,000	Linda & Warren (2)	14,800
Alpha (1)	11,000	Linus S. Eldridge (3)	33,000
Amelia (2)	22,000	Louise (3)	33,000
Antonia (1)	7,000	Lubenray (2)	21,000
Antonina (1)	7,500	Malene & Marie (3)	33,000
Babe Sears (1)	11,000	Maridor (2)	22,000
B. & E. (3)	23,000	Marjorie M. (2)	6,000
Barbara (3)	25,500	Martha E. Murley (1)	11,000
Barbara & Gail (1)	11,000	Mary & Julia (2)	22,000
B. Estelle Burke (2)	22,000	Mary Ann (2)	22,000
Bobby & Harvey (2)	22,000	Mary J. Hayes (2)	21,500
Brant (2)	22,000	Mary J. Landry (1)	5,600
Bright Star (2)	22,000	Monte Carlo (2)	22,000
Camden (2)	22,000	Moonlight (2)	22,000
Carol & Estelle (2)	22,000	Muskegon (2)	19,000
Catherine & Mary (2)	22,000	Nancy Jane (2)	22,000
Charles S. Ashley (3)	33,000	Nellie Pet (2)	22,000
Dartmouth (2)	22,000	New Bedford (3)	25,000
David A. (1)	11,000	Newfoundland (2)	22,000
Debbie Jo-Ann (3)	33,000	Noreen (3)	33,000
Dorothy & Mary (1)	11,000	Pearl Harbor (2)	22,000
Edgartown (2)	22,000	Pelican (3)	33,000
Eleanor & Elsie (2)	22,000	Porpoise (2)	22,000
Empress (2)	13,500	Richard Lance (1)	11,000
Elizabeth N. (2)	22,000	Rosalie F. (1)	11,000
Eugene H. (3)	33,000	Rush (3)	33,000
Eunice-Lillian (2)	22,000	Ruth Moses (3)	33,000
Fairhaven (3)	33,000	Santa Cruz (1)	5,800
Falcon (2)	20,000	Sea Hawk (3)	19,200
Felicia (2)	22,000	Sea Ranger (2)	33,000
Flamingo (3)	33,000	Sippican (3)	33,000
Fleetwing (2)	22,000	Smilyn (1)	11,000
Friendship (1)	6,000	Stella Maris (1)	6,500
Jerry & Jimmy (2)	22,000	Ursula M. Norton (2)	22,000
John G. Murley (1)	11,000	Vivian Fay (3)	33,000
Josephine & Mary (2)	10,600	Wamsutta (2)	22,000
Kingfisher (2)	22,000	William D. Eldridge (3)	33,000

Columbian

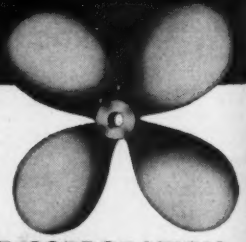
4-BLADERS

are standard throughout today's fishing industry, from California to Maine. Experienced owners and fleet-owners know these Columbians just can't be beat for rugged dependability, economical operation.

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COLUMBIAN BRONZE CORPORATION

Freeport, L. I., N. Y.



Specifications for Mid-Water Trawl

(Continued from page 11)

Eleven aluminum alloy planing floats, each 8" in diameter, are lashed about two feet apart along the "square" of the head-rope. These spherical "hat floats", as they often are called, are fitted with a lifting plane around the lower portion of the sphere. They are used on the mid-water trawl net because they increase the normal lifting ability to about 5 times that of an aluminum float without a lifting plane at normal towing speeds. When the net was towed about one fathom beneath the surface of the water, it was observed from a power skiff that the floats gave adequate buoyancy and that the head-rope formed a broad upward arch.

Each of the four sweep-lines which connect the four wings to the towing warps is 30 fathoms in length and made from $\frac{3}{8}$ " diameter 9/16 galvanized wire rope (see Fig. 2). The two lower sweep-lines are lengthened to 31 fathoms with one fathom of $\frac{3}{8}$ " chain, so that the net will tow horizontally through the water and give a maximum vertical opening to the mouth of the trawl. The four sweep-lines are coupled to the corners of the wings with swivels, and the upper and lower sweep-lines from each side are shackled to the receiver-link, which is termed the tow-point.

The tow-point is the junction at the receiver-link of four lines—the two sweep-lines, the single wire pennant to one of the otter-boards and to the towing warp from one of the winches.

Depressors Cut from Steel Plate

The depressors (Fig. 2) are designed to give a continuous downward thrust to the two lower wings, thus assisting in producing not only a maximum opening to the mouth of the trawl but also in depressing immediately, the lower sweep-lines and lead-line when setting the gear. The two depressors, each of which measures 15" x 23", are cut from $\frac{1}{4}$ " steel plate and shackled to the two lower sweep-lines just ahead of the two lower corners of the wings. They are attached in this manner so that they can slide freely on the sweep-lines and remain on deck when faking in the first fleet of the wings.

This type of depressor replaces the heavy and cumbersome weights which have been used previously on mid-water trawls to depress the lead-line. The angle of the depressor on the sweep-lines may be adjusted easily by the addition of split chain links or shackles to the existing shackles which connect the depressors to the sweep-lines.

The pennant, a single $\frac{1}{2}$ " galvanized wire rope, 10 fathoms long, is shackled to the tow-point. To the other end of this rope is attached the curved dual-fin otter-board.

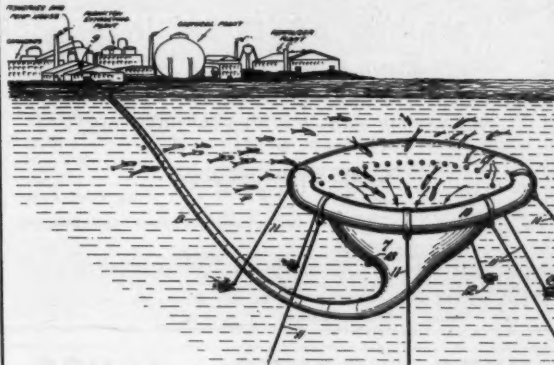
Dual-Fin Otter-Boards

In the past many Canadian fishermen have expressed the opinion that the ordinary otter-boards which are placed at the ends of the sweep-lines or bridles do not have sufficient spread, and tend to drive or scare the herding away from the mouth of the trawl net. An arrangement whereby the boards are suspended on pennants was designed to minimize the disturbance immediately in front of the net.

Each otter-board is constructed from two sheets of $\frac{3}{4}$ " thick laminated plywood and measures 5½ feet long and 3 feet in height. The curvature of the boards (see Fig. 3) is held by two bent angle iron strips on the upper and lower edges. Horizontal stability of the boards in the water is provided by two horizontal upper and lower fins which are cut from $\frac{3}{4}$ " plywood and bolted to the curved iron strips. The two adjustable vertical fins which are made from $\frac{3}{4}$ " plywood and bolted to the upper and lower horizontal fins help in maintaining the correct angle of attack of the otter-boards when towed in the water. All of the exposed plywood edges are bound by strips of half round iron.

The position of the fore and aft towing lugs is shown in Figure 3. A bridle is made from four pieces of $\frac{3}{8}$ " galvanized chain. The upper chains have 16 links in the fore

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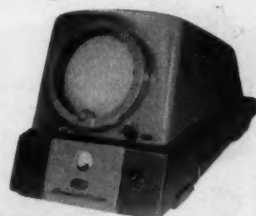
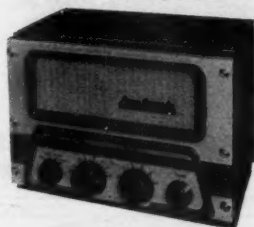
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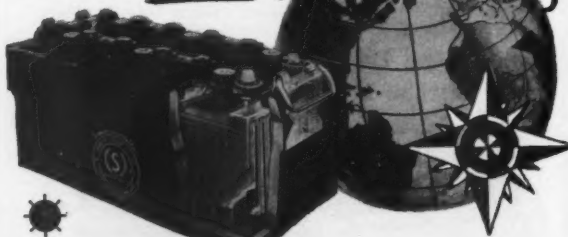
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length and 26 links in the aft length; and the lower chains have 17 links in the fore length and 27 links in the aft length. All four chains are shackled to a steel seine ring 5" in diameter. The single ½" wire pennant is in turn shackled to this.

Each door is weighted and balanced with lead bars of different lengths, totaling 135 pounds (Fig. 3). One bar 3" x 1" x 5'6" is bolted to the bottom edge parallel to the lower horizontal fin. Three smaller bars 3" x 1" x 11½" are bolted above each other to the lower front edge of the door and a single bar 3" x 1" x 10" is bolted upright to the front edge of the door. The four smaller bars give the proper balance to the doors during setting and towing.

When the otter-boards are being towed at full speed or at fishing speed a number of factors in the adjustment of the boards must be accounted for: (1) the weight of the boards; (2) the angle of attack of the boards in the water; (3) the balance; (4) placement of towing lugs; (5) adjustment of the vertical fins (angle); (6) length of each of four sections of chain in the bridle.

The boards must be able to right themselves should they collapse or fall over with any change in towing speed. It was found that the vertical fins should be set at a negative angle of attack of about 35° from the towing axis in order to keep the aft section of the boards closest to the vessel when in operation.

New Bedford Haddock and Trash Fish Landings Up

A total of 6,230,200 lbs. of food fish and sea scallops were landed at New Bedford during May, according to the Fish & Wildlife office. The only noticeable increases in production over the past few months were in haddock and trash landings.

Seventy-nine scallopers made 143 trips during May to land 1,462,900 lbs. of the shellfish. The haul of other species included 358,100 lbs. cod; 2,298,000 lbs. haddock; 338,400 lbs. gray sole; 492,500 lbs. lemon sole; 270,800 lbs. yellow-tail; 494,900 lbs. blackback; 459,900 lbs. dabs; 24,900 lbs. fluke; and 29,800 lbs. all other species. There were 5,202,540 lbs. trash fish, mostly hake.

"Estrela" Has New Owner

Philip Filetto of Gloucester is the new owner of the former New Bedford fishing vessel *Estrela*. The 195-ton vessel was built at Ipswich in 1945.

New Fish Weigher Begins Duties

Henry B. Murdoch, recently appointed public fish weigher, has begun his duties at Pier 3, New Bedford. Murdoch named three deputy weighers to enforce recently established fish cull and weight standards. They are: Tobias M. Cabral, John J. Shea and Albert F. Matthews, Jr.

According to John F. Linehan, general manager of the Seafood Producers Assoc., Inc., the fish cull and weight regulations put into effect are working out fine. Every catch unloaded is supervised by Murdoch or a deputy.

High Scallop Price

Scallop prices went up to 53.40 cents a pound at the Pier 3 auction room on June 9. It was the highest price paid for the shellfish in six weeks. Only five times since April 17 had the price for scallops been more than 50 cents a pound.

Dragners Land Lobsters

Over 13,000 lbs. of live lobsters were landed at New Bedford last month by three dragners. The *Janet & Jean* brought in 4,800 lbs. of lobsters on the 7th, while the *Capt. Deebold* had 5,500 lbs. and the *Flamingo* 3,000 lbs. on the 21st.

FOREIGN BAILINGS

FISH ADVERTISING LEVY has been doubled by British distant-water trawlermen for all landings at Hull, Grimsby, and Fleetwood. It will now be about 14 cents for every 140 pounds of fish landed.

DUTCH IMPORTS OF FISH PRODUCTS from United States amounted to more than \$3 million in 1955. Major item was fish oil, but they also imported canned salmon, lobsters and crabs.

The Dutch recently lowered import duty on canned salmon from 20 percent to 15 percent ad valorem. Furthermore, they agreed to consolidate the free rate on menhaden oil, which is a most important item.

NEW CANADIAN RESEARCH BOAT of 167 feet in length is to be built for service in Northwest Atlantic by Fisheries Research Board of Canada. The Diesel-powered, steel-hulled trawler will be larger and more extensively equipped than any of the other 14 vessels in research fleet. Her fishing gear will be calibrated so that catches she makes will indicate what landings of a regular trawler would be in area explored.

SILVER COD TROPHY which is awarded by British Trawlers' Federation to distant-water vessel that catches and lands most fish, was won in 1955 by 780-ton oil-fired Hull steam trawler *Kirkella*. Record-breaking catch of 6.4 million pounds exceeded by 249 tons that of 1954 winner.

ANOTHER RICH FISHING GROUND has been found by a West German trawler, only 80 nautical miles west of the Dohrn Bank in same latitude as Angmagssalik on east coast of Greenland.

JAPANESE ALBACORE EXPORTS to United States for fiscal year 1956 (which began on April 1, 1956) will be limited to 32,000 short tons.

FIRST FISH FREEZING VESSEL to fly Indian flag went into operation latter part of May. The craft has freezing capacity of four tons per day and cold storage facilities for approximately 70 tons of fish.

SOUTH AFRICA'S WHALING FLEET produced total of 20,500 short tons of oil during 1955-56 Antarctic whaling season, about 11 percent above previous year's total.

CANADA'S HADDOCK CATCH of 62.2 million pounds for January-March 1956 set an all-time high. More haddock was landed in three months this year than in any full year prior to 1954.

Canadian seafish landings rose in four-month period ending in April to 519,529,000 pounds from 318,020,000 in same period last year.

Georgia Hard Crab Production Gains

Total fish and shellfish landings at Georgia ports during the first four months of 1956 amounted to 2.8 million pounds. Hard crabs, with 2 million pounds, accounted for 72 percent of the total. Shrimp, with 428,000 pounds, and shad, 160,000 pounds, followed. With more shrimp boats operating and warmer waters at hand, crab production is increasing.

The Central Section of the State is experiencing an increase in fishing for sturgeon and catfish. Since the shad season is over, a number of fishermen are concentrating on catching these fish. Oyster production decreased, and only a few of the oyster shucking plants were in operation during April.

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For sale, 45' McInnis-designed, Western-rigged dragger, 100 hp., 605W Mack Diesel, Bendix DR-7 depth recorder, 35-watt Jefferson Travis radio, Hathaway hoist and nets ready to go. Built at Waldoboro, Maine, in 1945. Ed G. Winters, Westhampton Beach, Long Island, N. Y.

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DRAGGER FOR SALE

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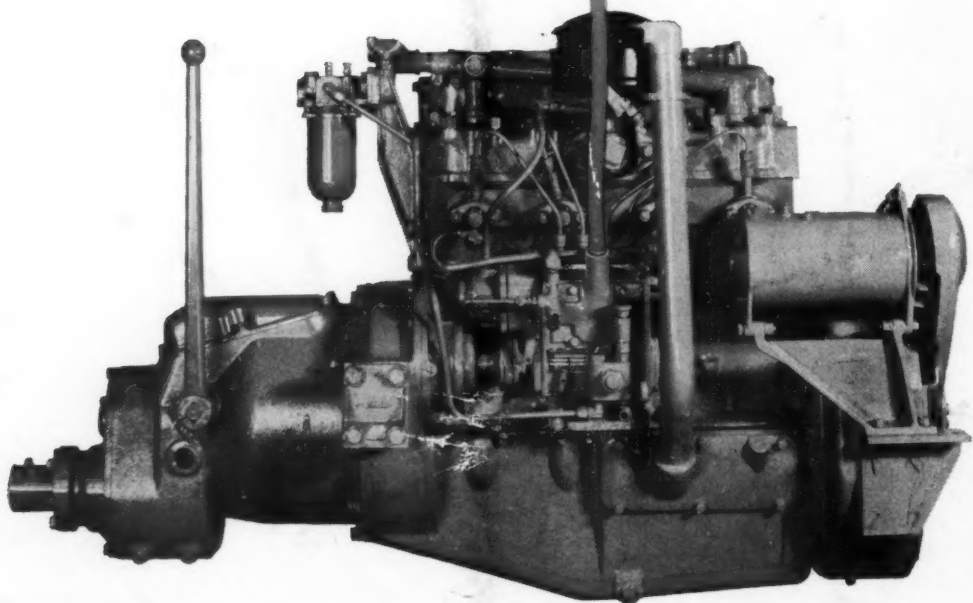
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